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Disco

ALFALFA AND SEED BOOK



Dakota Improved Seed Co.
Mitchell, So. Dak.

Eighth Annual Announcement



We have always taken great pride in the quality of our seeds. Our motto has always been to lead and not follow. **Disco Registered Alfalfa Seed** has always been our specialty and we can truthfully say that no one has done more to raise the standard of hardiness, quality and pedigree with alfalfa than we have. **Disco Northern-bred Seed Corn** has also been a leader in our business. We have given a great deal of attention to the development of special early and hardy varieties for the extreme north.

In addition to the handling of these and other special field crop seeds, we have in the past endeavored to handle a full line of garden seeds so as to meet our customers' full requirements. Experience has shown us that in giving the required attention to our specialties it is impracticable to handle the garden seeds in the careful painstaking way that they should be handled. We have, therefore, disposed of our garden seed business to the John A. Salzer Seed Co., of La Crosse, Wis., who give special attention to this department of the seed business. This leaves us in a position to confine our attention to the lines in which we have specialized and we can truthfully say that we are in better position to-day to supply our customers' demands along these lines than anyone else in the world.

The problem of any organization is to render the greatest possible service to its patrons. It is the aim of this institution to make the **Disco Service** more efficient and of more value to its patrons each year. We know that we can now give better service in our specialties than ever before and we hope to always merit the words of approval that we receive from our many patrons. The **Disco Organization** is at your service and we hope that every farmer and stockman in the Northern States will be benefited now more than ever before through its efforts.

DAKOTA IMPROVED SEED CO.

November 25, 1914.

TO WHOM IT MAY CONCERN:

This is to certify that the Dakota Improved Seed Company of Mitchell, South Dakota, has sold to the John A. Salzer Seed Company of La Crosse, Wisconsin, the Garden Seed Department of their Mail Order Seed business including all vegetable and flower seeds and that the Dakota Improved Seed Company will discontinue handling garden seeds in the mail order way.

This is to certify also that the John A. Salzer Seed Company has purchased said Garden Seed Department from the Dakota Improved Seed Company and will combine this with their present business.

It is understood by the contracting parties to this transaction that the transfer affects only garden seeds and that the Dakota Improved Seed Company will continue to handle Farm and Field Seeds as heretofore.

Dakota Improved Seed Co.
By W. A. WHEELER,

Secretary.

John A. Salzer Seed Co.
By HENRY A. SALZER,

President.

How to Grow Alfalfa Successfully

Big Money in Alfalfa. Read how returns of from \$50 to \$200 per acre have been made from alfalfa with less effort than it takes to raise a crop of wheat or oats. Page 2.

More Money in Registered Alfalfas. Alfalfa is just coming into its own. Ordinary alfalfa is good. Disco Registered Alfalfas are better. They cost less per acre than common alfalfa and will make you more money per acre and per dollar invested. Read about them. Page 5.

Plant Only Hardy Alfalfa. Hardiness and acclimatization are most important factors whether you live in Missouri or Canada. Read the "why" and "wherefore" of Hardy Alfalfas. Page 4.

Quality Insurance. Learn what constitutes "quality" in alfalfa seed; how seed should be graded and how you are protected in the purchase of Disco Registered Alfalfa Seed. Pages 13 and 30.

Pedigreed Alfalfas. You know about pedigreed live stock. Perhaps you don't know about pedigreed alfalfas and that the Dakota Improved Seed Co. is the only commercial organization in the world that is producing and offering strictly pedigreed alfalfa seed. Pages 7, 9 and 11.

Grimm and Baltic Alfalfas. What are they? Why are they? You have heard about them. Better learn more about them. Page 9.

How to Seed Alfalfa. There is nothing more important to success with alfalfa than a knowledge of the Time, Rate and Method of Seeding. Read about it by "one who knows." Pages 8 and 10.

Inoculation. Clear up the mystery about alfalfa "bugs" that are not bugs at all but simply bacteria that work while you sleep to improve your land and increase your crops. Page 10.

A \$30,000 Order for Alfalfa Seed. Read how one organization of farmers last year purchased of us for their members over \$30,000 worth of Disco Registered Alfalfa Seed—the largest alfalfa seed order ever placed. Page 3.

Weeds in Alfalfa. You have heard about dodder and other weed seeds found in alfalfa. Learn the truth about them. Page 14.

Corn and Alfalfa. There are no crops in the world that beat corn and alfalfa for live-stock. This book would not be complete without corn. Read about **Corn for the North.** Pages 17 to 25.

Dry Land Specialties. Nothing better than **Kowliang, Sudan Grass, Amber Cane, Kursk Millet and Emmer** for dry farming in the Great Plains Area. Pages 26 to 28.

Grasses and Clovers. Northern grown seed from reliable sources has always been given first place both in hardiness and production. Page 16.

Big Money in Alfalfa

Alfalfa, Corn and Live Stock—The Farm Profit Trio

We cite below a few examples of alfalfa profits. Some of these are above the average while others are but normal returns that can be looked for by any farmer who gives any care and attention to this most important crop. Alfalfa responds to good treatment as well as any other crop. Every attention and care given to alfalfa is returned in greater fold than with any other field crop.

Hundreds of instances of very profitable returns from alfalfa could be cited but we have room here for only a few. We hope they will serve to stimulate greater interest in "Alfalfa, Corn and Live Stock," the greatest money-making trio of farm products in the world.

Illinois....There are so many reports on alfalfa from this state that only a few can be cited. At the Experiment Station a field of 4 acres during 5 years averaged 4.8 tons. With alfalfa hay at \$15 per ton the average returns were \$72 per acre. A farmer in Whiteside county realized \$181.00 per acre during 1910 from a six-acre alfalfa hog pasture. Chas. E. Yanney of McLean County gives the average returns of \$112 per acre for two years from the use of alfalfa both as a hog pasture and for hay. Wm. Freitag of Tazewell County has five acres on rather high prairie land which yielded 7 tons per acre in 1913 and 1914. Most of the hay was fed on the farm. One cutting was sold in the shock for \$12 per ton. This is a low price but even at this the returns were \$84 per acre. Frank Harris of the same county has 4½ acres on bottom land. In 1913 he secured 26 tons of hay and pastured 100 spring pigs and their dams all summer. His returns in 1914 were equal to those of 1913. Yields of 5 to 7 tons per acre are very common in Illinois. In fact the average seems to be about 5 tons per acre and returns from \$50 to \$100 or more per acre.

Michigan. A field of alfalfa at the State Experiment Station that has been in about 8 years has yielded during this time exclusive of year of seeding an average of 5.45 tons of hay per acre. There is no record of this land having been fertilized before seeding and only one coat of manure has been given during the 8 years it has been in. Farmers over the state report yields from 3 to 6 tons per acre, a large percentage of them reporting over 4 tons.

Missouri. In Pettis County, Missouri, about 140 farmers have put in alfalfa in the last 2 or 3 years and all who followed instructions have succeeded but two and these failures were due to grasshoppers and hail. The first years crop has run from 3 to 4 tons per acre. Alfalfa is now growing there successfully on land commonly believed to be entirely unsuited to alfalfa.

New York. Mr. O. B. Smith, Onondaga County, N. Y., reports a yield of 4 tons of alfalfa hay per acre. Alfalfa hay sells readily there at \$19 to \$25 per ton. Four tons of alfalfa at \$19 per ton equals \$76, the value of the crop produced on land valued at \$100 per acre. Facts taken from "What is What in The Empire State."

The above is by no means above the average for the alfalfa belt in New York State. Five tons and more per acre are often secured.

Wisconsin. In 1914 a farmer in Sauk County sowed alfalfa early in the spring without a nurse crop and cut 3 cuttings this year, making a yield of five tons of hay per acre the first season of growth.

On the Cornfalfa farms in Waukesha County there are about 175 acres of alfalfa. This is considered the most profitable acreage in crop.

Wisconsin has perhaps increased its alfalfa acreage the past few years as rapidly as any state in the United States.

North Dakota. The Experiment Station at Dickinson furnishes the following data from 2 farmers in that state.

A farmer in Stark County having 20 acres of alfalfa in cultivated rows reports net income for 1914 as follows: Hay \$16; Seed \$33.44; Total \$49.44. The net return from wheat the same year on the same farm was \$10.50 per acre.

Another alfalfa grower in Richland County having 7 acres of alfalfa that was sown on upland in 1912 makes the following report for 1914: Yield per acre from four cuttings, 8½ tons; net income over \$100 per acre. Wheat on the same kind of land on the same farm netted the grower about \$10.00 per acre.

South Dakota. In eastern South Dakota hay production with alfalfa seems to be the most profitable; in the western part of the state alfalfa seed is the leading crop. In each of the years 1913 and 1914, the Dakota Improved Seed Co. paid one man in western South Dakota from \$8,000 to \$9,000 for his crop of **Disco Registered Alfalfa Seed** produced on about 250 acres. In addition to the seed crop a good first cutting of hay was secured.

One grower on the Belle Fourche Irrigation Project produced 3,000 pounds of **Disco Pedigreed Alfalfa Seed** in 1914 from about 8½ acres. As the seed was "**Disco Pedigreed**" the grower sold the entire lot at one time for sixty cents per pound which gave him over \$200 per acre for the seed crop alone. The first crop was cut for hay and easily covered the total expense of growing and handling the crop.

Prices of All Seeds are given on Inside Back Cover



More Alfalfa and Better Alfalfa

"Alfalfa on Every Farm"

A great deal has been said about alfalfa in the past few years. Better Farming Associations, Development Associations, County Farm Bureaus, Agricultural Improvement Associations, Railroad Companies, Agricultural Implement Companies and many other organizations, private, corporate, state and national, have instituted propagandas having for their object the extension of alfalfa growing throughout the country. Some of these organizations are clinching the educational work that is being done by instituting a campaign of seed distribution. This is being done particularly where county agricultural agents or superintendents of agriculture are located and active in the work. Through them a personal canvass of the farmers can be made and fields of from one to several acres can be located where no alfalfa seed would be sown through the ordinary methods of publicity. Through these organizations and this line of work, thousands of acres of alfalfa are to be planted during the next few years.

Official Recognition of Disco Service

Several Associations have taken up with the Dakota Improved Seed Co. the matter of handling the distribution of alfalfa seed for them in order to secure more general culture of this important crop. In the spring of 1914 this Company furnished **Disco Registered Alfalfa Seed** and handled the distribution for a number of Associations and local organizations. Among these were the **West Central Minnesota Development Association** and the **North Dakota Better Farming Association**. During this one season of distribution the former Association distributed over 150,000 pounds of seed in about 17 counties in Western Minnesota, and, the latter Association, about 60,000 pounds of seed over the State of North Dakota. This seed was all handled under the direction of Agricultural Extension Departments and county and field Agricultural Agents. The seed was all tested and approved for shipment into the state where it was to be sown. This was practically an insurance to the grower that the seed that he secured would be satisfactory in every way.

The fact that the Dakota Improved Seed Co. has been designated by prominent associations after careful and thorough investigation to handle the alfalfa seed proposition for them, is looked upon as an official recognition of the kind of work that this company has done and is continuing to do with this important crop. At the present time negotiations are in progress with many other local and state organizations working toward a further distribution of **Disco Registered Alfalfa Seed** in other sections of the country.

Special Offer

To FARMERS' CLUBS
BETTER FARMING ASSOCIATIONS
and other similar organizations

Write us today for our special plan of distribution of alfalfa seed to farmers through agricultural organizations. It is possible for you by this plan to secure **Disco Registered Alfalfa Seed** at a saving of cost and very little effort. The method of distribution is being used by farmers' organizations all over the country. Try it and reap the benefits.

Disco Guarantee is given on page 30

Hardiness and Acclimatization

In selecting alfalfa seed for the Northwest one of the principal points to consider is the ability of the strain to survive severe winters. There are certain strains or varieties of alfalfa which possess this hardiness to a very marked degree and such should be chosen in preference to the more tender ones. The alfalfa plant shows a great range in cold resistance. Some strains will winter-kill in severe winters in the latitude of Kansas and Missouri, while there are other strains that survive the most severe winters of North Dakota and Canada. There are a great many other strains which range in hardiness between these two extremes.

The best policy is to secure an alfalfa that has been tried out under the most severe conditions, or in other words, is of known hardiness. Disco Registered Alfalfas, such as Disco-Baltic, Disco-Grimm, Disco Nos. 28 and 38, Disco 19A, 32C and 62B, and perhaps a few others, come in this class. Even though the price of the Disco Registered Alfalfa seed may be double that of ordinary alfalfa of unknown record, the actual expense of

securing a good stand under northern conditions is very little if any greater, and one has the assurance that they are not likely to be winter-killed the first hard winter. It is hardly necessary to use more than one-half the amount of seed of the hardy Disco Registered Alfalfas that is necessary of even the best home grown commercial seed. It is, of course, very poor policy and out of the question for progressive farmers to use seed from the extreme South, for it would be simply throwing away money or running the risk of possibly one or at most, two or three years of cropping if the winters were mild.

It appears that some strains of alfalfa have been improved very much by acclimatization. I do not wish to be understood as implying that all alfalfas are of the same origin, or that the same results can be secured through acclimatization in the same period of time with all strains. It appears from experiments that the hardest known alfalfas in the United States today are the Disco Registered Alfalfas mentioned above that have been grown in the extreme North for quite a number of years. There is considerable evidence to show that much of this extreme hardiness was acquired through acclimatization.



Representative plants of the Hardy and Non-hardy type of crowns of four-year-old alfalfa taken from the same nursery, grown as single plants under the same conditions. The plant on the right, the common or Southern type; the plant on the left, a fair sample of Baltic alfalfa, a variety found growing near the little town of Baltic, South Dakota, (Bul. 181, Col. Ag. Exp. Sta.)

Relation of Type to Hardiness

From Colorado Experiment Station Bulletin No. 181, by Prof. Philo K. Blinn, I quote the following:

"In Minnesota and in North and South Dakota, where the winter conditions are far more severe than in Colorado, the tests of alfalfa varieties for cold resistance have been very interesting. In several large variety tests the same results have been secured, namely, the Grimm, Baltic, and Turkestan varieties of alfalfa have proven to be the most hardy of a large list of alfalfas from different parts of the world. These results tally almost exactly with the results of similar tests in Colorado. All of these three strains have a distinct type of crown as compared to the type of crown found in the non-hardy varieties. The fact is, the hardy strains of alfalfa have spreading crowns with underground root stocks and shoots with buds which are protected by soil, from winter freezing."

"The non-hardy strains of alfalfa have more upright stooing crown with the bud areas very near the surface, exposed to winter freezing, thawing and drying out. Hence, there is a decided relation between the TYPE OF THE CROWN and its tendency to winter-kill.

"The stooing traits of the hardy strains are shown in the early seedling stage. This is illustrated in figure on another page which shows some seedlings of Grimm's alfalfa only six weeks from seed. The other figure on the same page shows some ordinary Spanish alfalfa of the same age. Both lots were taken at the same time and under the same conditions in the field. The heavy stooing habit of the Grimm's alfalfa is very evident. The significant value of this trait can hardly be overestimated. It not only affords immunity from winter losses, but the protected underground buds are less liable to injuries from over-pasturing or attacks from grasshoppers. The spreading crown seems to be associated with a very much branched surface root system in addition to the deep tap root. This growth habit makes surface moisture easily available. Hence, it is not surprising that the Grimm's and Baltic alfalfa should have proven to be the best type for dry conditions. This is confirmed in the dry land tests.

"The Grimm's and Baltic strains of alfalfa have revealed the most promising traits in the Colorado tests, but the Baltic seems to be in the lead in seed production and slightly in the lead in hay yields. Apparently there is little difference except in seed yield, yet there are contrasts in the relative merits of different selections which are evidently transmitted. Hence, the strains of alfalfa can be made more uniform through seed selection."

Prices of All Seeds are given on Inside Back Cover

Registered

Disco
GUARANTEED SEED

Alfalfa



Photographs of portions of the alfalfa nurseries of the Missouri and Indiana State Experiment Stations to show winter-killing of tender strains even under a milder climate.

Missouri alfalfa nursery on left, showing check row grown from Nebraska seed winter-killed and a row of hardy alfalfa on each side in perfect condition. The row on left of center is Minnesota Grimm or Disco 23 and is the best row of the entire series.

Indiana Alfalfa nursery on right, showing several rows winter-killed, while the rows of other hardier strains survived.

Greater Profits from Registered Alfalfas

It is just as important to know the kind of alfalfa you plant as it is to know the kind or variety of corn, wheat, oats or any other farm crop—in fact it is more important because a single seeding of alfalfa lasts for several years (if you plant **Disco Registered Alfalfa Seed**) while grains are merely one-year crops. Neither you nor any other up-to-date farmer would go to your neighbor or your seedsman and buy just oats for seed. Most certainly you wouldn't. Instead you would ask for Swedish Select or Sixty-Day oats or some other variety of registered seed that you knew absolutely was the best seed for your purpose that money could buy.

Apply the same line of reasoning to your alfalfa seed. Instead of buying just alfalfa seed, buy **Disco No. 28** or **Disco No. 38** or any other **Disco** registered number, and thus be able to know just what you are getting and be able to secure more seed of the same number or its equivalent later.

Approved by Highest Authorities

The **Disco System** of registering alfalfas by a **Disco Register Number** by which they would be known for all time was formulated by the writer in 1913. It has been discussed in detail with agronomists and field crop investigators of experiment stations of North and South Dakota, Minnesota, Wisconsin, Michigan, Ohio, Indiana, Illinois, Missouri, Iowa and other states and has met with their hearty approval. It is considered the only feasible plan of getting down to a working basis and knowing what one is doing in experimental work with this crop.

The **Disco Registration System** will be used in the registering of the most desirable native or acclimated stocks. **Disco Register Numbers** will be applied only to those stocks having a record of growth of ten years or more in the Dakotas or Montana or under equally severe conditions. Many of these registered stocks have records of over 25 years in the Dakotas, for example, **Disco Numbers 28** and **38**, but for convenience we have set an arbitrary minimum of ten years of acclimatization for all **Disco** registered strains of seed.

The mere fact of ten years growth in the Dakotas or Montana does not alone entitle an alfalfa to registration. This period of acclimatization is necessary to determine hardiness. In addition to this the alfalfa must have a good record for production of both hay and seed and must demonstrate its superiority to common stocks.

Cost Less Per Acre Than Ordinary Alfalfas

A seeding of ten to twelve pounds per acre of **Disco Registered Alfalfa Seed** invariably gives greater returns than fifteen to twenty pounds of ordinary commercial alfalfa. The cost per pound of seed may be more but the lighter seeding required and the greater returns from **Disco Registered Seed** make your profits nearly double.

No up-to-date farmer who wants to make **more money** will buy just ordinary alfalfa seed or just Western, American, Turkestan, Montana or Kansas seed, but will buy **Disco Registered Alfalfa Seed** recorded under the system approved by the best Agricultural Experiment Stations and alfalfa authorities in the country.

Prices of All Seeds are given on Inside Back Cover

Preparation of Soil

Because of the newness of many of the farms of the Northwest, alfalfa has often been sown upon newly broken prairie, sometimes with only very little preparation of the soil. Occasionally very good returns are received from this kind of treatment. In general, however, the use of new ground is not to be recommended. The best preparation of soil for a crop of alfalfa is to have it used for a small grain or cultivated crop for three or four years previous to the sowing of the alfalfa. If the land is old land and has been deeply plowed and well cultivated in the past, it can be prepared immediately for alfalfa. The reason for giving new land three or four years of cultivation before sowing the alfalfa is very apparent, if one gives the matter slight thought. This treatment is necessary to get the surface soil worked to a depth of 7 or 8 inches and to hold the precipitation in this surface soil and allow it to permeate into the subsoil for two or three years before the alfalfa is sown.

The deeper the soil of the alfalfa field is plowed the year previous to the sowing of alfalfa, the better. Alfalfa should not be sown upon a newly plowed field. If the field upon which it is to be sown has been plowed the same year, it should be thoroughly cultivated and worked down so that there is no loose soil under the surface before the alfalfa seed is sown, and it is better to have from four to six weeks elapse after plowing and deep cultivation before sowing the seed. I would consider an ideal preparation to be as follows: Plow the ground either in the fall or very early in the spring and if possible disk the land before plowing. As early as possible in the spring or immediately after plowing, if the plowing is done at that time, harrow the ground very thoroughly, so as to firm the soil below the surface. Repeat this harrowing at intervals of ten days or two weeks up to the seeding time, which will be the middle of May or later. In this way practically all of the weed seeds that are within an inch or two of the surface will have germinated and have been destroyed. This treatment is of the greatest importance, for there is nothing that tends to injure young alfalfa plants more than crowding by weeds. Just before seeding drag the field thoroughly and prepare it as you would for the finest garden vegetables. Don't be afraid of putting too much work in preparing the surface of your field, leveling and putting it in the best state of tilth. Every dollar spent in this way will pay as big interest as any investment made on the farm. One of the finest fields of alfalfa that I know of in the state of South Dakota, which is on the farm of Isaac Lincoln of Aberdeen, owes its present value and condition to two things: First, the most thorough preparation of the seed bed, and, second, the fact that it is Disco-Grimm Alfalfa, which is one of the hardiest varieties known.

Care During the First Season

Even where the strictest precautions are taken to eliminate weeds before seeding alfalfa, there will probably be quite a percentage of weeds appear at the same time as the alfalfa. These can to a large extent be destroyed just as soon as they are high enough to be reached by a mowing machine. When this is done, set the mower a few inches from the ground, so as to just clip the tops of the weeds and the alfalfa. The alfalfa will start along and grow faster than before and most of the weeds will be checked in growth. It may be necessary to make a second or third clipping during the season. If the weather has been particularly favorable to the growth of the alfalfa, the last cutting may be used for hay, but it should not be made so late that there is not time enough left for the alfalfa to make a good growth before winter to protect it from winter-killing. Alfalfa seems to be more susceptible to winter-killing the first winter after it is sown than later. One should do everything possible to protect his fields from the effects of severe winters. Even with hardy strains it is probably true that they will be better off and produce a better growth and larger yield of hay the following season if sufficient winter protection is given by late fall growth.

Cultivation of Alfalfa

In the production of alfalfa under dry land methods, it is proper to apply all the knowledge that we have regarding the holding of soil moisture for the use of the crop. It is true that alfalfa will survive without a large supply of water, but every pound of a limited supply of water that we can save can be profitably used by this crop. In holding moisture in an alfalfa field about the only thing we can do is to cultivate the field when conditions are right. An ordinary disk may be used for this purpose, but far better than this, one of the special alfalfa cultivators can be used. Cultivation can be done at any time after the second year from seed just after cutting the crop of hay or before the growth has started in the spring if the ground is dry enough to work up readily. This process not only serves to work up the ground and hold the moisture, but has a tendency to break up the crowns of the alfalfa and cause them to shoot out from lower points and give the appearance of thickening the stand. It also tends to keep the field free from weeds.

Cultivating the alfalfa, if properly done, is one of the most valuable practices to follow and has other beneficial effects besides that of conserving the moisture. If done at the right time, in the right way, there is no danger from the practice. In fact, an alfalfa field after cultivating may appear to be chopped all to pieces and yet recover from this treatment to the extent of producing 30 to 50 per cent more hay in the succeeding crop or crops than it did previous to treatment.

Several kinds of cultivators are in use for cultivating alfalfa. The various machines using the spring-tooth system seem to be giving better results than either the spike-tooth or ordinary disk, though any tool that will stir up the ground without cutting off the alfalfa crowns is useful.

Prices of All Seeds are given on Inside Back Cover



Portion of Alfalfa Nursery at the Michigan Agricultural Experiment Station. The rows on the left of man standing in center are a number of Disco Alfalfas furnished to the station for trial in 1910. A strong contrast is here shown between the extremely hardy Disco Alfalfas and the tender common strains.

Disco Pedigreed Alfalfas

The work of developing pedigree strains of hardy alfalfas was begun by the writer at the Brookings and Highmore Stations in 1904. As a result of this work there have been produced a number of strains of alfalfa that show a decided superiority over the common alfalfa as well as over the parent stocks from which the pedigree strains were selected and developed. Because of the numerous obstacles in the way of conducting this line of work, the progress made has been necessarily slow and the amount of seed produced from improved strains necessarily small. Even under these adverse conditions, the writer has made very marked progress during the past ten years and has developed some very desirable strains which can be offered in a small way to Experiment Stations and others interested in this line of work.

The pedigree strains growing in the **Disco Alfalfa Nursery** today represent selections from the first to the seventh generation. Practically all of them trace back to the parent stocks of Disco-Grimm, Disco-Baltic and Disco-Turkestan, all of which have developed remarkable records of hardiness and production. In the Disco common nursery there are about 100 stocks of alfalfa seed under trial from various sources. In addition to the common nursery, there are also isolated plots of the best **Disco Pedigreed Alfalfas**, each of which represents the direct product of the seed of a self-pollinated individual of one of the most desirable strains. These self-pollinated plants have back of them several generations of open-nursery selection and the self-pollination is only done to bring about closer adherence to the type of plant sought in making the selection. Quite a diversity of types can be seen in our common nursery between the stocks from different sources, but more pronounced lines of demarkation are apparent between the pedigree selections because of their closer conformity to special types.

We believe that our work in the development of pedigree strains of alfalfa is the most important work that we have done and ranks as the leading work of the kind in the country today. In fact, we know of no other commercial organization in the world conducting the kind of investigational work with alfalfa that we have done and are continuing to do. The Disco alfalfa nursery is visited very frequently by Experiment Station workers from all over the United States and Canada, and the writer is quite freely consulted by the foremost authorities in the country on this line of work.

Until the Disco pedigree strains have been increased to much greater quantities than at the present time, they will have to be offered at high prices and will probably be used only by Agricultural Experiment Stations and others particularly interested in the increase of alfalfa for seed. The general stocks of Disco-Baltic, Disco-Grimm and Disco-Turkestan, though not in a strict sense pedigree alfalfas, are usually grouped with the pedigree strains because of their remarkable records of hardiness and production. In the numbering of Disco registered pedigree strains, a letter is often used following the number to designate the parent stock from which the selection has been developed. Among the registered pedigree selection numbers from these three parent stocks that show up most prominently at the present time are the following:

From the Baltic—Disco Numbers 11C, 12C, 13C, 31C, 32C and 84C.

From the Grimm—Disco Numbers 1A, 2A, 5A, 6A, 10A and 19A.

From the Turkestan—Disco Numbers 13B, 14B, 15B, 16B and 62B.

The letters A, B, and C simply designate the parent stocks from which the pedigree selections have been made.

Seeding

TIME OF SEEDING—When one comes from the East to the farms in the Middle West one of the most noticeable things among the farming operations is early sowing of most farm crops. It seems to be a mania with most western farmers to get the seeds into the ground just as soon as the snow is off in the spring. I must admit that in many cases the best returns are gotten in this way.

Alfalfa, however, is a crop which should not be sown early. There are several reasons for this. Alfalfa is usually injured by hard spring frosts. If sown early it germinates at the same time that our usual abundant supply of green foxtail germinates and the young plants are crowded by this weed. It is much better to prepare the land early in the spring, as has been suggested, and sow the alfalfa at any time between May 1st and July 1st that the soil is in suitable condition and there is sufficient moisture to germinate the seed and maintain growth. I might set a limit even later than July 1st, but we seldom have a year in which there does not come some time between May 1st and July 1st when there would not be sufficient moisture in the ground to give the alfalfa a good start. If the ground has been previously prepared, advantage can be taken of the most desirable condition whenever it occurs. I have sown alfalfa in the vicinity of Mitchell as late as August. In fact, one of the best stands I ever secured was sown August 8th. I do not think I would advise waiting until this late date for the sowing of alfalfa unless it happened that no desirable conditions came before this time and the conditions at this date were particularly favorable to the germinating of the seed and rapid growth of the young plant. Another reason for preferring late seeding to early seeding is that with favorable moisture conditions the alfalfa seed will germinate much quicker and make a much more rapid growth in warm weather than in cool weather. Many seedings made during the month of April take so long to germinate and make such a weak growth that they are likely to be crowded by weeds or otherwise stunted before they get half a start.

Seedlings of the Grimm's Alfalfa, six weeks from seed, showing the early stooling traits. (Col. Agri. Exp. Sta. Bul. 181.)

able moisture conditions the alfalfa seed more rapid growth in warm weather than in cool weather. Many seedings made during the month of April take so long to germinate and make such a weak growth that they are likely to be crowded by weeds or otherwise stunted before they get half a start.

RATE OF SEEDING—It is often recommended that alfalfa be seeded at the rate of from 20 to 25 pounds of seed per acre. When this rate of seeding is recommended the apology or excuse for the recommendation of so heavy a seeding is usually that "practice has shown this seeding to give the best returns." I myself some years ago recommended as high as 20 pounds of seed to be sown per acre with this same explanation. This, however, is a great reflection on our methods of culture and preparation of the ground. Every pound of alfalfa seed that is sown to the acre places upon each square foot of ground about 5 seeds. If it were practicable to distribute the seed evenly over the entire field and every seed produced a good plant, this would be more than would be necessary for a good stand of alfalfa under any conditions. Twenty pounds of alfalfa seed sown per acre would at this estimate place 100 seeds to each square foot, which is several times as many as necessary.

I am inclined to think that one of the chief reasons for the apparent necessity of heavy seeding has been the lack of adaptability of the strains of alfalfa that have been grown to the conditions, and to careless preparation of the seed-bed. In the alfalfa-producing sections of the extreme West and Southwest a seeding of 20 pounds per acre would be considered very wasteful. Six to ten pounds are usually considered sufficient. If adapted strains were used and thorough preparation of the soil made in the dry land regions of the middle west, it appears to me that there would be no more necessity for the seeding of 20 to 25 pounds here than there would be in the older alfalfa-producing sections. In fact, I have gotten in the habit (which habit, by the way, has been secured by observation and experience) of recommending for the Disco-Baltic alfalfa, Disco-Grimm alfalfa and other adapted strains, the seeding of only 8 to 12 pounds per acre. With seed of ordinary percentage of purity and germination this quantity should be sufficient.

In Minnesota, Iowa and states east of these it is still the practice to sow 15 pounds or more seed per acre. My experience does not extend far east, but I believe that results will soon show that the lighter seeding of adapted strains is preferable even for the more humid conditions of the eastern states.

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Prices of All Seeds are given on Inside Back Cover



Seedlings of the ordinary Spanish Alfalfa, six weeks from seed, showing the upright growth and less tendency to stool or form a crown. (Col. Agri. Exp. Sta. Bul. 181.)

Registered



Alfalfa



Load of alfalfa seed weighing 5,930 lbs., produced on 20 acres of land near Mitchell, S. D.
For this load the grower received a check for \$1,008.30.

Disco-Baltic and Disco-Grimm Alfalfa

Disco-Baltic—S. D. Exp. Sta. No. 167—Disco Register No. 78.

Disco-Grimm—S. D. Exp. Sta. No. 162—Disco Register Nos. 20 and 25.

The Baltic alfalfa and the Grimm alfalfa are so nearly alike in all characteristics that it is difficult to treat of one without bringing in the other.

It may be that the Baltic and Grimm alfalfas are from the same original stock. Whether this be true or not, we have not been able to determine from records. It is true, however, that any differences that can be detected between the Baltic and Grimm in any test are no greater in value than the differences often found between two stocks of Grimm alfalfa, whose origin is definitely known.

The Baltic alfalfa was first brought to the writer's knowledge in 1904 by Mr. W. F. Kelly of Renner, S. D., near the town of Baltic. Mr. Kelly and Mr. Evans of that place had grown this alfalfa up to then for about ten years. Mr. Kelly called my attention to this stock while I was connected with the South Dakota Experiment Station and furnished me enough seed for trial plats.

Since the Baltic alfalfa was first called to my attention by Mr. Kelly, it has been tested at various stations in the United States and Canada. Reports of these tests have been made from Minnesota, North and South Dakota, Colorado, Oregon and Canada.

The Grimm is a regional stock imported into Minnesota by Mr. Grimm in 1857. It has been grown in the vicinity of Mr. Grimm's home near Excelsior, Minn., ever since its first introduction. It has been tested at nearly all the northern experiment stations in comparison with other stocks, and never to my knowledge has it been excelled by any other variety in cold resistance. If the fame of the Grimm alfalfa rested upon just one test in one locality, there might be a question as to the value of its record, but when one considers that it has been tested at the Minnesota Experimental Stations, at the Fargo and Dickinson stations in North Dakota; Brookings, Highmore and Belle Fourche stations in South Dakota; Indian Head, Saskatchewan and many other points, and has never shown any winter-killing to speak of, its record is certainly remarkable.

Disco-Turkestan

S. D. Experiment Station No. 164—Disco No. 77.

S. D. Experiment Station No. 240—Disco No. 60.

A great variation is shown in the different importations of Turkestan alfalfa. Some are extremely hardy, while others are more or less tender. In our experience with a large number of importations we have found that some of those tracing back to S. P. I. No. 991, imported by the U. S. Department of Agriculture in 1898, are the most promising. The two numbers mentioned here and selections from them seem to be perfectly hardy in North and South Dakota and Minnesota: Disco 62B, a pedigreed selection from Disco No. 77 is probably the best Turkestan alfalfa on record at the present time. It is perfectly hardy, a good type of plant and a good seed producer.

Prices of All Seeds are given on Inside Back Cover

Inoculation of Alfalfa

Alfalfas, clovers and all other plants of the Pea or Legume family require special kinds of bacteria for their best development. These bacteria are known as "legume" or "nitrogen-fixing" bacteria and if they are not present or are not supplied to the seed or soil in which legumes are grown the plants do not thrive as they should.

Legumes as fertilizer crops. The action of the legume bacteria on the roots of legumes causes small growths or nodules to form which serve as homes for the bacteria. While living in the nodules the legume bacteria extract nitrogen from the air and furnish it to the growing plant. They also add nitrogen to the soil for the use of other neighboring plants or for other crops that may be planted on the same land after the legume crop is removed. This is the reason that all legume crops such as alfalfa, clover, peas, etc., are called "soil enrichers" or "fertilizer" crops. They are not in themselves the fertilizing agents but they furnish suitable homes for the special kinds of bacteria that are able to get the nitrogen from the air and put it into a form so that the plant can use it. Alfalfa also requires a certain amount of lime in the soil for its best development.

Where Inoculation is Not Necessary. In many of the older alfalfa growing districts that are peculiarly fitted naturally for the growing of alfalfa, the soils already contain a sufficient amount of both lime and alfalfa bacteria. Artificial liming and inoculation are not necessary in such soils. This condition prevails in much of Western South Dakota and in fact a large part of this state as well as in many other western states. In most of North Dakota, Minnesota, Iowa, Missouri and states east of these very marked results are often secured from inoculation by pure cultures. In fact in a large portion of these states inoculation is necessary for the most successful growing of alfalfa. Artificial liming is required only where the soils are acid or deficient in lime.

Pure Cultures of Nitrogen-fixing bacteria for legume crops are put up for our use in the most approved form by a prominent bacteriologist and can be relied upon to accomplish the desired result. These cultures are grown in a mass of jelly which contains the proper food for the bacteria. They are sent out in bottles, each of which contains enough bacteria to inoculate a certain amount of seed and the necessary jelly-food to keep them alive and active for a long time.

A special kind of bacteria is required for each kind of legume-crop so it is necessary to specify the crop on which the culture is to be used. It must also be understood that these cultures are absolutely worthless on any but legume crops.

Soil Transfer Costly and Dangerous. It is occasionally recommended that inoculation be affected by the transfer of soil from one alfalfa field to another or from one clover field to another. This method is both costly and dangerous—weed seed, soil and plant diseases are transferred in this way.

Cost Only 10 to 20 cents per acre. The Dakota Improved Seed Co. carries in stock only cultures for alfalfa but can secure cultures for other legume crops when desired on special orders. The cost of cultures for alfalfa heretofore has been so high as to appear unreasonable. We have this year made special arrangements by which we are able to offer cultures at only a small fraction of the former cost. Where before the cost was about two dollars per acre this has now been reduced to only 10 to 20 cents per acre, depending on amount of seed sown.

Disco Cultures for Alfalfa are put up in two sizes: The regular size for inoculating one bushel of sixty pounds of alfalfa seed at \$1.00 per culture; and the large size for treating 150 pounds or 2½ bushels of seed at \$2.00 per culture. Where the large size cultures are used and 10 pounds of seed sown per acre, each culture will inoculate one hundred fifty pounds of seed or enough for 15 acres at a cost of \$2.00 or about 13 cents per acre.

Special Offer. We would like to have all **Disco Alfalfa Seed** that is used in localities where inoculation is necessary inoculated with **Disco** cultures before sowing. As a special inducement to have this done we make the following special offer: On orders for 3 or more bags of **Disco Alfalfa Seed** of 150 pounds each that are accompanied by orders for **Disco Alfalfa Cultures** to treat the entire amount of seed we will allow a discount of 25% from the above price of cultures which reduces the cost of inoculation to only one cent per pound of seed treated.

(Continued from page 8)

Method of Seeding. I have usually recommended sowing the seed broadcast and dragging lightly after seeding. My object in this has been to distribute the plants over the entire area instead of having them in rows. I hardly think my reason is good. More seed would naturally be wasted by broadcast seeding than by seeding with a drill and the rows sown with an ordinary grain drill would be close enough for alfalfa plants. One objection to drill seeding has been the tendency to sow too deep. In extremely light soil this deep seeding may be desirable, but under most ideal conditions for the seeding of alfalfa, deep seeding is detrimental. I would say that in most soils and under ordinary conditions, seeds should be sown from one-half to one inch deep.

There are many opinions expressed as to whether a nurse crop is desirable or not. A survey of these views would, however, show that a majority of the authorities preferred seeding alone in midsummer. It appears to the writer that results in eastern South Dakota, Minnesota and other localities of greater humidity show that the seeding of alfalfa with a light nurse crop has been very successful and in many cases better than where the alfalfa is sown alone. Barley, Flax and Early Oats have all given good results as nurse crops for alfalfa.

Prices of All Seeds are given on Inside Back Cover

Three Valuable New Alfalfas

The height of development reached in pedigreed alfalfas as a result of over 10 years work in plant-breeding and selection.

South Dakota is noted for "doing things" with alfalfa. Much of the leading plant-breeding and selection work with hardy alfalfas has been done at Brookings, Highmore, Mitchell and Newell, South Dakota, by A. C. Dillman and W. A. Wheeler. Prof. N. E. Hansen of Brookings, S. D., is the first one to give special attention to the introduction of Russian and Siberian alfalfas into the United States and these are being tested all over the state. The foremost and perhaps the only commercial alfalfa plant breeding nursery in the United States is operated at Mitchell, S. D., by the Dakota Improved Seed Co. Western South Dakota is noted for its alfalfa seed production; in yield per acre, hardiness and quality of seed produced.

For these reasons one would expect the best introductions of new and hardy alfalfas to come from South Dakota. The new **Disco Pedigreed Alfalfas** described here are the result of the combined efforts of A. C. Dillman and W. A. Wheeler. The original selections from which these have been derived were made by W. A. Wheeler at the Highmore Experiment Station in 1904. Further selections, comparisons and eliminations have been made since then by W. A. Wheeler at the Highmore Station and in the **Disco Alfalfa Nursery** at Mitchell and by A. C. Dillman in the **Disco Alfalfa Nursery** at Mitchell and at the U. S. Experiment Station at Newell.

Superior to All Others Tested

The three new introductions of **Disco Pedigreed Alfalfas** here described have demonstrated their superiority to all others under trial. Because of the fact that the entire supply of seed has had to be taken direct from small isolated nursery plots only a few ounces or a pound or two of each is available for distribution. Most of the seed will be required for increase. We realize, however, the desire of some to get a start with the "best there is" in alfalfa so are offering a limited number of packets containing enough seed to give one a start in a small way.

DISCO 11 C

The Greatest Seed Producer Yet Discovered

The **Disco-Baltic Alfalfa** which was first introduced by the Dakota Improved Seed Co. has been noted for its capacity for great seed-production. We have been studying for years the various types in the original Baltic to find the best seed-producer. Several were set aside as showing better seed production than others. By continuous selection from these and testing at various stations we now have one which excels all others in seed-production and which is also an excellent producer of hay both as to quality and quantity.

Disco 11 C combines all the qualities desired for the Northern states, namely: extreme hardiness, high seed production and excellent forage qualities. It is without doubt the most valuable alfalfa for seed production yet introduced.

DISCO 5 A and 6 A

Improved Selections from the Grimm

Disco Pedigreed selections from the Baltic and Grimm alfalfas showing the ideal type to resist injury from freezing or heaving of the ground. Note the low spreading much-branched crown below the ground-line and the much-branched root system.



These two selections from the well-known pioneer of hardy alfalfas, the Grimm, show such similarity that we can best describe them together. They trace back to the same original selection in the Highmore nursery. Their great point of superiority over all other selections from the Grimm or Baltic or any other alfalfa is their wonderfully vigorous growth. Everywhere in the Disco Nursery as well as elsewhere Disco 6 A has outstripped all others in size and weight of plant with Disco 5 A as a close second. Both numbers show the highest percentage of plants of the first order. A row of either one can be picked out among hundreds of others on account of vigor of growth. Both are fair seed producers but Disco 5 A leads slightly in this respect. The quality of the forage is excellent. No other excels these two in hay production. Color of flower varies somewhat but not so much as in the general stock of Grimm.

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Prices of All Seeds are given on Inside Back Cover

Handling the Alfalfa Crop

THE HAY CROP—Some difficulty is usually experienced in harvesting and curing the first crop of hay in sections where there is sufficient rainfall to grow the crop without irrigation. The first growth of alfalfa usually gets ready to be cut for hay early in the month of June, just about the time that many regions in the Middle West have abundant rainfall. The ideal stage to cut the alfalfa is in early bloom, but one has to be governed in cutting this first crop perhaps more by the conditions of the weather than by the condition of the crop. Rain on new-cut alfalfa very seriously injures it. In fact, it usually causes it to lose its leaves, which are the most valuable part of the alfalfa hay. The best practice is to cut at one time only what can be handled quickly and easily and gotten under cover. It is customary to begin mowing in the morning of a bright day, rake into windrows in the afternoon when the hay becomes wilted, turn this the next forenoon and in the afternoon stack it or put it up in small cocks, preferably the latter, and allow it to cure for several days before stacking it or putting it in the mow. An ideal way is to get the hay into cocks as soon as possible and have small cock covers to protect the number that one is likely to require at a single cutting. By this method one can almost always get the hay under cover without injury, and the saving of one crop of hay will easily pay for a large number of covers. In the cutting of the second, third or fourth crops, one does not usually encounter these adverse conditions, but they are occasionally present and the same practice is followed.

THE SEED CROP—The conditions most favorable for the production of alfalfa seed have been given a great deal of study, but we are still very much in the dark. Many theories have been presented, but most of these fail when put to the test in different localities.

Alfalfa produces seed readily in most sections having an annual rainfall from 15 to 25 inches. Where the precipitation is greater than this seed production is usually light. Alfalfa produces seed best during a dry, hot season. Seed may be saved from either the first or second crop. Throughout the southern half of South Dakota and Minnesota and in most irrigated sections, the second crop is commonly left for seed. When the seasons are short and precipitation light, the first crop is the safer of the two. At the Highmore Experiment Station I succeeded in securing some good crops of alfalfa seed by leaving the first crop for the seed from the second crop. In seed from both first and second



First car shipment of Disco Registered Alfalfa Seed on "Largest Single Order of Alfalfa Seed Ever Placed," as reported by "Chicago Grain Dealers' Journal" and other papers.

purpose, but never succeeded in obtaining a good yield in the vicinity of Mitchell I have secured good yields of crops, with perhaps the advantage with the first crop, that he can secure a crop of hay and then a crop of seed by using the second crop for seed this advantage is very much offset.

Alfalfa should be cut for seed when about two-thirds or three-fourths of the pods have turned brown. Various machines are used for cutting. One of the best, I think, is a mowing machine with a bunching and dropping attachment.

Alfalfa may be threshed from the field or stacked in the ordinary manner and threshed from the stack. A clover or alfalfa huller is the best machine for the purpose, but where there is none available, an ordinary threshing machine with clover hulling attachments will do very well and perhaps is equal to the special huller.

The uncertainty of securing a good yield of alfalfa seed has made alfalfa seed growing somewhat limited in extent. Where alfalfa seed production can be depended upon this is one of the most profitable crops to grow, but in most sections of the country the hay crop is much safer.

PASTURING ALFALFA—Alfalfa fields should not be pastured the first season and much care should be exercised in pasturing them the second year. In fact, many recommend that pasturing should be left till the third year. Alfalfa is one of the most valuable pasture crops that we have, and yet there are wide differences of opinion as to its general value. Some stockmen who seem to know just exactly how to handle the crop say that it makes excellent pasture for hogs, cattle, horses and sheep, and there are other stockmen on the other extreme, who say that it is adapted only as hog pasture. This is a subject that one must study carefully with his own stock and his own conditions. I would not advise anyone to suddenly change from any regular pasture to alfalfa. Begin gradually, study your stock, the conditions of the crop, and other factors influencing your stock at the time, and then determine to just what extent you can use alfalfa as a pasture crop. There is hardly an exception to the opinion that alfalfa makes excellent hog pasture. The differences of opinion seem to be on its use for other kinds of stock. In certain sections of the West it is very apparent that they depend almost entirely upon alfalfa as hay and pasture for all kinds of stock. Whether it is because the stock have become educated or adapted to it in those sections or not, I cannot say. It is true, however, that wherever alfalfa can be used as pasture for stock, it will furnish one of the cheapest and most valuable forms of protein or muscle-forming food that it is possible to obtain.

Prices of All Seeds are given on Inside Back Cover

Disco Quality Alfalfa Seed

We are proud of the reputation we have gained with farmers representing Better Farming Associations, Experiment Stations, Agricultural Colleges, County Farm Organizations and other similar institutions on the quality of our alfalfa seed.

We wish every farmer and purchaser of alfalfa seed to know just what is meant by "Disco Quality" in alfalfa seed so we give here briefly a statement of the meaning of the various terms and grades used in describing Disco Alfalfa Seed.

Purity-Germination Insurance. All stocks of **Disco Registered Alfalfa Seed** are sampled to State and U. S. seed laboratories before shipment. The results of these tests are used as the basis of the report on the **Purity-Germination Tag** which is attached to every shipment of **Disco Registered Alfalfa Seed**. These tags cover the requirements of the seed laws of all the States. Every purchaser is thus assured of an accurate statement of the quality of his seed.

Classification of Disco Alfalfas

"Disco Pedigreed" Alfalfas are those that have gone through a number of years of selection for special purposes under northern conditions. They trace back to from one to several generations of individual plant selections in special alfalfa nurseries where they can be studied, compared and selected in the most intelligent manner. General stocks of Baltic and Grimm alfalfa are usually grouped as pedigree alfalfas because of their remarkable record even though it is not known that they come from individual plant selections.

"Disco Registered" alfalfas are those that are given Disco Register numbers based on known record and source of seed. Disco Register Numbers are given only to those having known records of ten or more years growth in the Dakotas, Montana, or under equally severe conditions. Disco Registered Alfalfa Seed is designated both by a Register Number and the grade of seed. Except in special cases no seed will be offered as "Disco Registered" unless it grades "Disco" or "Extra-Disco."

"Disco Commercial" alfalfa seed represents seed grown in the Dakotas or Montana unless otherwise specified and will be graded according to quality as "Disco," "Emerald" or "Opal." Lower grades of commercial seed will be sold on sample.

Grades of Disco Alfalfa Seed.

"Extra Disco" Alfalfa Seed shall be pure as to kind, clean, sound, plump, of good color, free from noxious weed seeds, shall test 99 per cent pure or better and shall contain not more than five per cent soft dead seeds in a 6-day germination test.

"Disco" Alfalfa Seed shall be clean, sound, reasonably plump, of good color, free from noxious weed seeds, shall test 99 per cent pure or better and shall contain not more than eight per cent soft dead seeds in a 6-day germination test.

"Emerald" Alfalfa seed shall represent those stocks which for some reason cannot be graded as "Disco." This is often because of some quality of really small importance and for this reason "Emerald" alfalfa seed is usually an excellent business proposition.

"Opal" and other grades of alfalfa seed not equal to the above are usually sold on sample through correspondence. To those who wish to plant alfalfa at the lowest possible cost or wish to sow alfalfa with small grain as a fertilizer crop we have some very attractive prices on lower grades of seed that are perfectly safe to use and from which excellent results can be secured.

(Continued from Page 11.)

Some Other Disco Pedigreed Alfalfas of Interest

Disco 1 A. A dwarf compact very leafy type. Flowers medium purple and very uniform in color. Produces very fine forage and is a fair seed producer. For the humid regions it is probably too dwarf. For dry locations it may prove superior to all others. It has already demonstrated more drought resistance than most alfalfas under trial and it has all the characteristics desired in a hardy dry-land alfalfa. We recommend it for trial under dry conditions in the Northern Great Plains Region.

Disco 2 A, 10 A, 12 C, 13 C and 84 C. Selections from the Disco-Baltic and Disco-Grimm which show many superior characteristics but which have not yet had as thorough a trial as we would desire before full introduction and recommendation. They are worthy of trial in any alfalfa nursery.

Prices: The above Disco Pedigreed Alfalfas are put up only in sealed packets of about 200 seeds each. Price per single packet 50 cents; 3 packets of one or more varieties \$1.00.

Prices of All Seeds are given on Inside Back Cover



This is the Tag used on each bag of a carload of **Disco Registered Alfalfa Seed** distributed by a Better Farming Association in 1914. Your shipment of seed will be tagged in the same way.

Weeds in Alfalfa

The subject of weeds in alfalfa comes up first in the purchase of seed to sow. It isn't altogether the number of weed seeds present in the seed so much as it is the kind. A large proportion of the alfalfa seed grown without irrigation in the Middle West contains green foxtail or Russian Thistle. In fact, it seems to be very difficult to secure alfalfa seed without a trace of one of these weed seeds present. The main objection to this kind of seed in alfalfa, if it is present in only small quantities, is the space it takes up rather than any noxious character of the seed. As far as the presence of this seed is concerned, I would not consider it very seriously. Only in so far as it affects the percentage of the purity of the sample is it very objectionable. There are other weed seeds which would come in the same category, namely, yellow foxtail, lamb's quarters, old witch grass, and some others.

The presence of a trace of Sweet Clover seed in alfalfa stocks is not considered serious. One occasionally runs across samples of seed which contain up to 15 or 25 per cent of Sweet Clover. If one wishes pure alfalfa seed such stocks should be avoided. Sweet Clover and alfalfa mixtures are very often sown and under certain conditions are very desirable. The grower, however, wishes to know whether he is purchasing Sweet Clover or alfalfa seed and would like to know the percentage of each so that he can be governed accordingly.

Dodder

There is no weed that has given alfalfa growers more concern in the purchase of seed than dodder. There is probably no weed about which so much is written and still about which so little is known as the dodder. It is classed as one of the noxious weeds in alfalfa and is quite commonly present. The dangers, however, from this pest are not always as great as one would think from the amount of literature published on the subject. It is a fact that very many authorities who discuss alfalfa and the various aspects of alfalfa culture, have never seen dodder in an alfalfa field or elsewhere. Alfalfa Seed containing the seeds of dodder should be avoided where possible and particularly in the alfalfa seed producing districts. Where alfalfa is grown almost entirely for hay and pasture in the more humid sections of the country there appears to be very little danger from an occasional seed of dodder in the alfalfa seed planted. Regular cutting of the field for hay seems to check or destroy the dodder.

There are several species of dodders which are more or less objectionable and others that seem to be harmless in alfalfa fields. The Clover Dodder (*Cuscuta epithymum*) and the Field Dodder (*C. arvensis*) are usually considered noxious and several states have enacted seed laws restricting the sale of alfalfa seed containing these. The Large-Seeded or Pretty Dodder (*C. indecora*) which is often present in alfalfa fields in the West appears much less objectionable and apparently harmless where fields are cut for hay only.

The dodders are all parasitic plants, the seeds of which germinate in the soil. As soon as a dodder plant appears above the ground, it begins a sort of spiral twisting to find a suitable green plant upon which to feed. As soon as it comes in contact with an alfalfa plant in its spiral journey, it twines around the plant and sends out small, root-like projections into the alfalfa tissues and takes its food from the alfalfa plant. As soon as this is accomplished, the dodder plant rots off at the surface of the ground and depends entirely thereafter upon the alfalfa plant for its nourishment. The leaves are small scales. The stems of the dodder are very fine and thread-like, but grow and branch very freely, so that a single seed may in a favorable year give rise to a mat of dodder several feet in diameter.

It must be born in mind that dodder is a very different type of weed from quack grass or Canada Thistle. Both of these weeds spread rapidly by underground stems or root stalks which are hard to get at and which are easily distributed throughout the field by plowing and cultivating and in this way establish new patches. Dodder grows entirely above ground and is reproduced from seed each year. All one has to do is to keep it from producing seed in order to destroy it entirely.



Dodder covering alfalfa plants. The white spots and the mass of white near the center are the flowers of the dodder. The thread-like stems running horizontally from plant to plant are the vine of the dodder.

Disco Alfalfa Trials

The Dakota Improved Seed Company believes fully in the handling of alfalfa seed on its "performance record" or "making good." Nothing ever permanently succeeds that hasn't back of it a foundation of real merit. As soon as this company was formed the policy was adopted of backing up the Agricultural Experiment Stations in their work with farm crops.

With Disco Alfalfas the situation was somewhat different than with some of the other crops. Improved strains of alfalfa were being developed and introduced by the Dakota Improved Seed Company, so the plan was adopted of furnishing samples of Disco Registered Alfalfas sufficient for trial gratis to all the state experiment stations and county demonstration farms and farm bureaus. At the present time there are upwards of a hundred institutions of this kind co-operating with us in this work and the number is continually increasing.

The plan of having every experiment station, county agent and alfalfa investigator in the United States and Canada test in trial plots exactly the same series of Disco Alfalfas is the most comprehensive series of alfalfa tests ever planned or carried out. The results that have been secured to date are most gratifying.

We have been more than surprised to find our Disco Alfalfas leading the procession in states where hardiness has so far been a minor consideration. Disco Alfalfas have been developed in the Northwest for hardiness combined with high production. The early returns from tests in Illinois, Missouri, Michigan, New York and other states go to show that the same alfalfas are "making good" in other states as well.

We have had a large demand from various schools, organizations and individuals for a series or collection of Disco Registered Alfalfas for trial plots either for competitive contests or merely for trials to determine how alfalfa will grow in particular localities and what kind of alfalfa would do best. This demand is so great at the present time that it is impossible for us to furnish seed to all of them gratis. To meet this situation we have made up two Disco Alfalfa Collections solely for trial plots and are offering them at the bare cost of the seed itself without taking into consideration the cost of packing, nor the cost of the alfalfa book and instructions accompanying each collection.

Disco Junior Alfalfa Collection

10 Cents Postpaid.

One-half ounce each of

- 2 Disco Registered Pedigreed Alfalfas.
- 2 Disco Registered "Native" Alfalfas.
- 2 Commercial Alfalfas from different sources.

One ounce of seed for outside rows.

One Disco Alfalfa Book.

One set of plans and instructions for planting and handling plot.

The seed furnished in the Disco Junior Alfalfa Collection is sufficient to plant from one-tenth to one-fourth acre, if desired depending on method of planting, or the test can be conducted on a very few feet of ground in the garden plot of a town lot.

Disco Senior Alfalfa Collection

25 Cents Postpaid.

One ounce each of

- 3 Disco Registered Pedigreed Alfalfas.
- 4 Disco Registered "Native" Alfalfas.
- 3 Commercial Alfalfas from different sources.

Two ounces of seed for outside rows.

One Disco Alfalfa Book.

One set of plans and instructions for planting and handling plot.

The seed furnished in the Disco Senior Alfalfa Collection is sufficient to plant one acre or less, depending on method of planting.

Special Alfalfa Contest Offer

To the first County Superintendent of Schools or County Agricultural Agent in each one of the states north of and including the 37th parallel of latitude who will organize a boys' alfalfa contest and make application to the Dakota Improved Seed Company, we will furnish gratis for this contest 100 or less as required of the Disco Junior Alfalfa Collections. The contest can be arranged to suit the one in charge. The only condition is that the Dakota Improved Seed Company be furnished a copy of the report of the contest.

To any other school, institution or organization wishing to conduct an alfalfa contest the Disco Junior or the Disco Senior Alfalfa Collections will be furnished in lots of 25 or more at 8 cents each for the Junior and 15 cents each for the Senior Collections.

One or other of these collections or offers should interest every farmer, farm boy or girl, owner of a farm, rural school teacher, county superintendent of schools, county agricultural agent, agricultural school teacher or principal, or anyone else engaged in farming or interested in agricultural pursuits in any way.

Prices of All Seeds are given on Inside Back Cover

Disco Quality Grass and Clover Seed

Don't Buy Seeds With Your Eyes Shut

It is an undeniable fact that many farmers purchase their grass and clover seed with their eyes shut, or what amounts to the same thing: they don't know what quality of seed they are buying. When one buys wheat, oats and barley it is a comparatively easy matter to determine impurities and it is a comparatively simple matter to make a germination test to find out what per cent will grow. In grass and clover seeds the situation is different, particularly with grass seed. The buyer, nine cases out of ten, has to take the seedsman's word for the quality of the seed that he is buying. It takes an expert to determine difference in quality in many kinds of grass seed by examination, and even then he cannot by a mere examination tell the percentage that will grow.

Sow Only Disco Brand

Noxious weeds are a curse to any crop and particularly to grass and clover crops. Farmers are just beginning to realize the importance of sowing only clean seed.

Our **Disco Brand** seeds represent the choicest, purest, cleanest, brightest, highest vitality and best seeds that can be obtained anywhere at any price. In order to secure and sell the Disco brand it is necessary for us to handle other grades not quite equal to the Disco. These will all be good seeds and well worth the price, but they will not be equal to the Disco brand.

The Emerald and Opal brands represent other grades of quality in our seeds. The Disco is the finest grade there is and will always be scarce. The Emerald is a very good grade and is equal to the best grade often sold. The difference between the real value of this and the Disco brand is often only one of appearance instead of a real difference in quality.

Disco Grass Seeds

Timothy. This is still the leading grass. There is probably more acreage of timothy grown each year than any other one kind of grass in this section of the country. It is comparatively easy to procure a stand of timothy and it is usually reasonable in price.

Russian Brome Grass. One of the best hay and pasture grasses for dry regions in the North. This grass has become well and favorably known throughout most of the Northwest.

Slender Wheat Grass. A very valuable native grass of the North Central States. Often but erroneously called Western Rye Grass. This grass has not been extensively sown in the Northwest, but wherever used produces good yields of hay of good quality. It is well adapted to a dry climate and is worth giving a trial as a hay grass anywhere in the region where it is native. Good seed is not always available.

Kentucky Blue Grass. This will always be the standard lawn grass and is also valuable to use in pasture mixtures where there is a reasonable amount of moisture. Kentucky blue grass of poor or uncertain quality can be bought at a much lower price than we charge for our Disco brand. We purchase the very choicest seed obtainable, regardless of price.

Disco Lawn Mixture. A well proportioned mixture of pure Kentucky Blue Grass, White Clover and a small percentage of other grasses well adapted to lawn purposes.

Disco Clover Seeds

Medium Red Clover. This is the common kind of red clover. Used alone or with timothy or in other grass mixtures. With our present increased facilities for cleaning we can offer the very highest grade of seed brought up strictly to our Disco standard. We handle only northern grown seed.

Mammoth Red Clover. Ten days or two weeks later than the medium clover and not so commonly grown. We cannot always furnish South Dakota grown seed of this clover, but will offer the best seed obtainable at prices governed by the condition of the market.

Alsike Clover. Often used in place of medium clover, especially in wet places. One of the best clovers to use with timothy. Longer-lived than medium clover.

White or Dutch Clover. Used in lawns and pastures.

Sweet Clover. There is considerable agitation at present about sweet clover. The experiment stations of the central and northwestern states are recommending sweet clover for hay and pasture as well as a soilings crop. It produces an immense amount of forage under conditions where other crops would fail. It will give better returns on poor soil than any other crop we know of and paves the way for other crops to follow. The annual variety should not be used, but either the white or the yellow biennial varieties are valuable.

Prices of All Seeds are given on Inside Back Cover

Insure Your Corn Crop

By Planting Northern Bred Seed

Disco Seed Corn for the North is **Northern-bred** and **Dakota Grown**. Seed is brought from special Northern stations each year and this seed is used for growing the general crop of seed for sale. Extreme earliness, full maturity, high germination and maximum productive power are thus secured in Disco Seed Corn in the best possible combination at the most reasonable price.

Cost of Good Seed Corn. Seed corn at \$1 per bushel costs from 12 to 17 cents per acre. Seed corn at \$3 per bushel costs from 35 to 50 cents per acre. A bushel of seed which increases the yield five bushels per acre at 30 cents per bushel is worth

\$9. Seed corn which costs \$3 per bushel must produce, in order to pay for itself, one bushel more of corn per acre than seed corn that costs \$1 per bushel.

Bushels per Acre are what really count in corn growing. There are authentic records of over 100 bushels per acre from Minnesota 13 in central Minnesota. There are records of other small-eared extremely early varieties producing over 100 bus. per acre in North Dakota. Such instances as these take the force out of the argument of the farmer who has to grow large late corn to produce 40 bushels per acre and the chances are that this contains $\frac{1}{3}$ water and when measured after curing will be less than 30 bushels.

Early or Late Corn. The growing of large eared late varieties has done a great deal to hold back corn growing in the North. Early varieties are safe. The profits per acre are usually much greater than from the larger later corn. In the more southern localities the larger varieties are profitable.

CORN CULTURE IN THE NORTHWEST
A Valuable Book Free to Every Corn Grower

By W. A. WHEELER

We have published this book, believing that corn growers would be interested in learning more about our several years of experimenting and careful selection of varieties of corn that are best adapted to the varying conditions that exist in different localities. What we have to say is right to the point. Send for your FREE copy today.

In the north none but the earliest small-eared varieties should be used.

Seed Corn on the Ear. Theoretically all seed corn should be sold on the ear. In practice, however, with northern-bred corn the tendency would be to select the larger ears and larger varieties in order to "make a good showing". Our method of handling northern-bred seed corn insures high vitality and the best quality, thus

Prices of All Seeds are given on Inside Back Cover

doing away with the necessity for ear-corn. Therefore, we do not sell any of the extremely early varieties on the ear. Results from Disco Seed Corn bear us out in this matter and the best authorities on corn in the north now recognize the force of this argument.

Shelled and Graded Seed Corn has many advantages over ear-corn for seed. It is ready for planting. There is no waste. It is carefully selected and then milled by special machinery for the purpose. All things considered, **Disco Northern-bred Seed Corn** shelled and graded is a decidedly better business proposition than purchasing any seed corn for the North on the ear.

Corn Crop Better than Summer Fallow. A corn crop takes the place of summer fallow in dry farming and is a much better business proposition. The benefits derived from the cultivated corn crop preceding a small grain crop will pay for the growing of the corn.

Let the Hogs Do It. The most economical method of handling the corn crop and increasing your hog profits in this time of high-priced labor is to "hog-down" the corn. Get the experience of the best corn and hog raisers and plant the earliest varieties of corn for this purpose. Corn can be fed without any effort from the first of August to December or January by this method.

Solve the Problem of Winter Feed. There is no crop that will do more in the saving of labor and increasing the profits from winter feeding than **fodder or silo corn**; easy to plant, easy to grow, easy to handle, easy to feed and easy to reap the profits. Early or medium varieties are better for this purpose than the large late varieties for the greatest feed values are secured from mature corn.

Fodder or Silo Corn

Fodder corn is a very valuable crop on the farm, but in the Northwest in particular it occupies a place that cannot be filled well by any other crop. It not only produces a large amount of forage to the acre, but supplies a cultivated crop that can be used in systems of crop rotation in place of the summer fallow. In the selection of corn for fodder purposes we do not recommend planting the very large, late varieties in the north, because they do not come near enough to maturity to produce the largest amount of feeding value. We recommend the early varieties that come nearly or quite to maturity for this purpose. It is not so necessary that the crop fully mature as it is with corn grown for other purposes, but the nearer it comes to maturity, the greater the food value and the more valuable it is to the stock feeding on it.

For fodder and ensilage corn we use our regular varieties of seed corn. In handling and cleaning these it often happens that some portions of our choice lots have to be kept out because of some accidental mixture with other varieties. This is often merely a trace but because of this mixture we do not offer them as our regular stocks. They represent the same field stocks as our regular grades and for fodder and ensilage purposes are equally good, and we offer them at prices much lower than our regular grades of seed corn. When ordering give your first and second choice of variety for our supply of any one kind may be limited. If the variety is left to our selection, we will use our best judgment.

Northern Fodder Corn. Suitable for growing in the extreme north and includes such varieties as Disco Pride, Northwestern Dent, Disco 85-day White Dent, Minnesota 23, Disco Amber Flint and Gehu Flint.

Medium Fodder Corn. Includes varieties such as the Disco-Murdock, Disco 90-day White Dent, 100-day White Dent and Minnesota 13.

Sweet Fodder...The best type of Sweet Fodder corn is the Evergreen, which produces a large weight of foliage and stalk per acre.

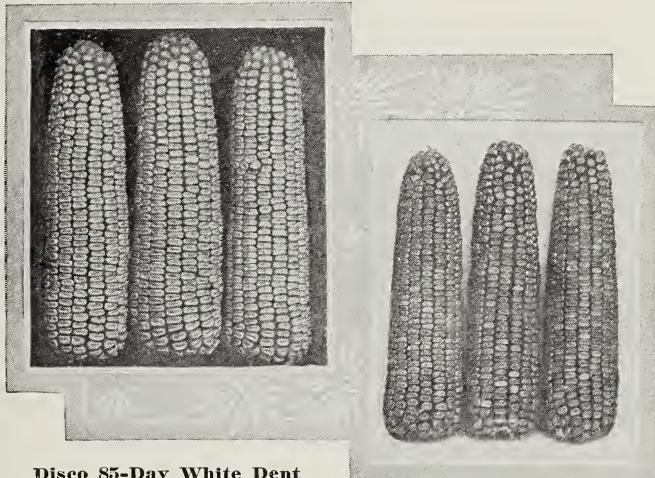
Prices of All Seeds are given on Inside Back Cover

Disco -Pride Corn

An Improved Strain of Brown County Yellow Dent

In 1906 we first ran across a variety of corn in Brown County which had made a good record for yield and earliness. It has been grown there and has matured satisfactorily every year for the past eighteen or twenty years. It has been tested at the Highmore Experiment Station, where it yielded between forty-five and fifty bushels per acre. In 1907, at the same experiment station, this corn outyielded all other varieties and showed a drouth resistance second to none. In fact, there was no corn at the Highmore station in 1907 that was nearly equal to this in resisting dry weather. In type it resembles the Pride of the North and North Dakota Golden Dent.

The original stock of Brown County Yellow Dent as we secured it in 1906 had not been selected for uniformity of type or color. The improved strain which we offer as Disco Pride shows a great improvement over the original. It retains the extreme earliness of the original strain, but has a better type of ear. There is still some variation in color and shape of kernel, but this does not injure it in any way when it comes to producing



Disco 85-Day White Dent

Disco Pride Corn

a good yield of corn under adverse circumstances. We believe that the Disco Pride corn planted in the northern part of South Dakota, North Dakota or Montana is as safe a proposition as anything in the way of corn that can be secured. Corn-growing in Montana is just in its infancy. We have been furnishing this variety of corn to our Montana customers for several years and have the most favorable reports from it. In fact, we are now having much of our stock-seed of Disco Pride grown there and can furnish our Montana customers with seed of this variety grown from Montana bred and grown stock-seed. The name "Disco Pride" implies the probable origin of this corn as an acclimated strain of Pride of the North. The Early Pride which has been offered by the Dakota Improved Seed Company for several years is a few days later than Disco Pride.

They Like Our Disco-Pride or Improved Brown County Yellow Dent

Brown County Yellow Dent corn is a good corn for this part of South Dakota. I like your manner of doing business and believe you are on the right track for success.

J. A. HALK, New Underwood, S. D.

Your seeds have always been the best I could get anywhere and the seed corn has been fine. Your Brown County Yellow Dent is, I think, the best corn I have tried for the Black Hills country.

E. D. SMITH, Piedmont, S. D.

Prices of All Seeds are given on Inside Back Cover

Northwestern Dent Corn

In North Dakota this corn is grown perhaps more largely than any other one variety. It is extremely early and hardy in North Dakota and northern South Dakota. No other variety seems to have given the uniformly satisfactory returns in North Dakota that are given by the Northwestern Dent.

The ears are of fair size, rather long and slender. The type of ear is intermediate between a flint and a dent corn. They are usually from seven to nine inches long and have from ten to fourteen rows of kernels.

The kernel is red with a yellowish cap, but there is a great variation in the colors of the kernels as well as in the type. The true type should have a slight dent, but the ears show a great variation in this respect.

This corn is too popular throughout the Northwest to need any further recommendation from us. It is the standard early corn in North Dakota and will probably retain its popularity for years to come.



Vice-president Morrow Inspecting Fields of Northwestern Dent Corn

Minnesota No. 23

An early strain of the standard White-Capped Yellow Dent. Originated on a farm in northwestern Minnesota and introduced by the Minnesota Experiment Station after several years' trial. Recommended by that station as probably the best extremely early variety for northern Minnesota. Records of over seventy-five bushels per acre have been secured in Minnesota, northwest of the Twin Cities, but from forty to fifty bushels of dry cured corn would be considered a good average yield.

Minnesota No. 23 is being grown quite extensively in North Dakota, and is "making good." We can also recommend it for northern South Dakota, Montana or any locality that requires the very earliest corn that can be grown.

MINNESOTA KING—A variety of early corn that is popular in some districts, but is not largely grown. In type this resembles both the dent and the flint varieties. The ears have eight rows of very broad, flat kernels, often much broader than long. The dent is shallow; color is light yellow. Season usually about the same as Minnesota No. 13, or possibly earlier.

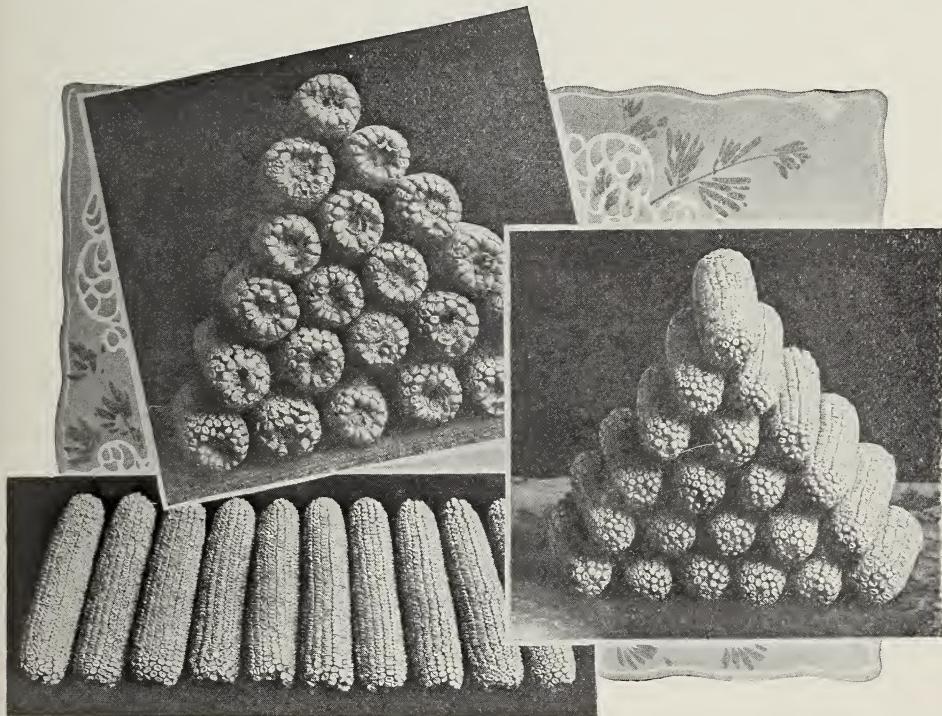
RUSTLER WHITE DENT—A standard variety of corn in the northern states. Very well liked by some growers. Ears of fair size, kernels rather shallow, season from 90 to 95 days. Very productive. We do not plan to keep this on hand at all times, for our Disco 85 and 90 Day White more than take its place for the region to which this is adapted.

Prices of All Seeds are given on Inside Back Cover

Disco -White Dent Corn

Many of the corn growers of the Northwest are partial to a white corn. Some think that white corn is harder and a better yielder than yellow. Others think it feeds better. Whatever truth or fiction there may be about the matter, it is certainly a fact that a good deal of white dent corn is raised and that there are strains or varieties that are "making good" over the whole Northwest. We have given the matter considerable thought and list here three varieties of different seasons. We wish especially to call attention to the Disco 85-day and the Disco 90-day varieties.

DISCO 85-DAY WHITE DENT—An improved strain of Payne's White Dent which has proved to be one of the very best varieties for the Northwest. Adapted to northern half of South Dakota, Southern North Dakota, Central Minnesota and other similar locations. A heavy yielder and a good variety in every way. Our stock seed is usually grown in Faulk, Potter and Brown Counties in South Dakota.



Disco 90-Day White Dent

DISCO 90-DAY WHITE DENT—From observations we have made the past two seasons, we feel perfectly safe in recommending this as a general crop for the latitude of central South Dakota and southern Minnesota.

We haven't handled a variety of corn that we have been more enthusiastic over than the Disco 90-day White Dent. It is more than meeting our expectations. Besides being early, the ears are good size and kernel is deep and well shaped. The photographs of this corn on this page show what the corn is. Notice the shape of the ear, the well filled butts and tips, the good type of kernel. In fact, it is hard to pass an unfavorable criticism on this variety.

Besides taking first premium at the South Dakota corn show for several years and sweepstakes in the central district in 1913, and first at the South Dakota state fair in 1912, this corn has won honors in other places and never has had to take a back seat in any place under fair competition.

DISCO 100-DAY WHITE DENT—An acclimatized strain of the Silver King. It is probably true that both the 85-day and the 90-day strains trace back to this well-known variety, as they have some of the ear-marks, but they are now very much earlier. In the Disco 100-day White we wish to preserve much the same season and type of the original Silver King or the Wisconsin No. 7. Recommended for southern South Dakota, northern Iowa and extreme southern Minnesota.

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Source of Seed Corn

In many of the extreme northern localities that are entering upon corn production, the problem of seed corn is always a serious one. Corn can be profitably grown in these localities, but it is often very difficult to secure seed corn that is well matured and has a sufficiently high vitality to produce a good yield the following season. The experiment stations and others interested in the extension of better corn growing in the northwest have been giving considerable attention to this problem. It appears that there will probably not be more than one year out of three or four in which the extreme north will produce anywhere near a sufficient amount of suitable seed corn for its own use. With this condition confronting us it is probable that the problem of producing in large quantities seed corn for the north at reasonable prices will be solved by the breeding of special types for northern conditions and taking such seed far enough south each year so as to be sure to secure the best maturity and vitality of seed and take this north the following year for general crop purposes. It is true that the growing of corn south of its normal locality has a slight influence each year on the type and season of the corn but this is not sufficient in any one season to be appreciable. If the seed is taken from the north each year and the seed grown south only one year before taking it back to its home locality, the advantages gained from full maturity and higher germination, which are usually found in such corn, more than offset any disadvantage from the corn having been grown in another locality for one season.

There is such a large proportion of years in which the corn in the north does not reach ideal seed condition and yet produce a good yield of good market corn that the proposition of producing and securing **southern grown** but **northern bred** seed is one that has been given the attention of northern corn growers for several years. It is the problem that some of the best seedsmen of the northwest have been working on. It is not the proposition altogether as to **where** the seed corn is **grown**, but **where** was the seed **bred** from which the seed corn was grown? This is the vital point to consider. Seed for northern conditions should not be continually grown in the south year after year from the same original stock. This would ultimately produce a later type of corn not adapted to northern conditions, but the production of seed corn south from northern bred seed is probably the very best method of solving this problem and is the one practiced by the Dakota Improved Seed Company of Mitchell, S. D.

Testing Corn for Germination

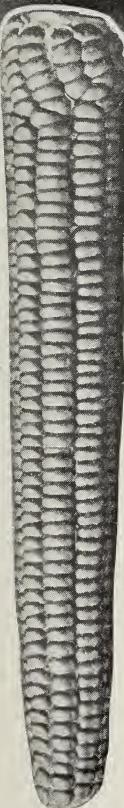
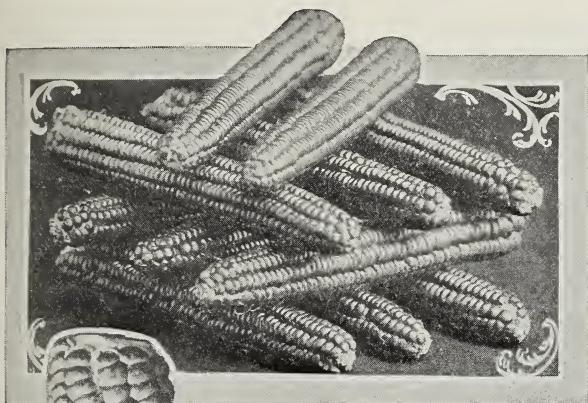
In order to be sure of the germination of seed corn it is well to make several tests at several times and possibly under varying conditions. If the seed corn has been carefully selected and carefully stored a preliminary test may be made by taking one kernel out of each of 100 ears or more to determine the general run of the stock. If the test runs very high and strong the necessity for ear-testing is not so great, but it will always prove profitable to ear-test corn when it is possible to do so.

If the seed corn has not been specially stored and one has to depend on corn that has been stored in a crib, it is well to make a preliminary ear-test with a view to determine whether it would be possible to select strong seed corn from the lot in question.

I am referring here to practical conditions, not necessarily to the ideal. For example, in the spring of 1912 the supply of good seed corn in the country was very low and it was necessary to use a large number of stocks of corn showing a germination from 75 to 85 per cent, because very few farmers had good seed corn and it was necessary to use the very best obtainable. If, at that time, every corn grower had insisted upon ideal conditions of seed corn, he would have had to lessen his corn acreage or go without planting altogether. Instead of that farmers of the Northwest did the very best they could and produced the largest crop of corn on record in spite of poor seed in the spring of the year. South Dakota's corn production of 1912 was over 76,000,000 bushels and never before had the state reached much over the 55,000,000 mark.

As to the details of testing, will say that there are numerous commercial testers on the market as well as home-made testers which will be found described in experiment station bulletins. These should be consulted freely and the best means at hand used for testing corn. Nearly every state experiment station has published some little pamphlet or bulletin giving full instructions, and these can be secured by writing for them.

Prices of All Seeds are given on Inside Back Cover

Disco Flint Corn

either alone or with other forage crops for this purpose.

DISCO AMBER FLINT. (90 days)—A variety that has been bred to overcome the undesirable traits of some of the other varieties of flint corn. It is a good yielder, producing from thirty-five to forty-five bushels per acre under ordinary conditions. It has a fair sized ear and carries it well up on the stalk, while most other flint sorts produce the ear on the extreme lower part of the stalk, thus making it a back-breaking job to husk the corn. The stalks are good height, leafy, and ordinarily produce two good ears to each stalk.

In breeding for the above desirable qualities, earliness has not been lost sight of. In fact, this variety is even earlier than most other flint varieties and about the same season as the very early strains of Minnesota No. 13.

The typical color of this variety is amber, but some of the ears are almost red at the tip, like the old Smut Nose Flint, so well known in the North.

DISCO 80-DAY WHITE FLINT—Ranks with Gehu as being one of the earliest varieties of flint corn. Very dwarf and suitable for early hog feed or for late planting to "hog-off" in the fall.

DISCO-MERCER FLINT (80 or 85 days)—Considered one of the best varieties of corn for planting in the northern half of North Dakota. One of the earliest varieties and a good yielder. The ear is of fair size and has eight rows of clear yellow kernels.

GEHU FLINT (80 days)—One of the earliest varieties of flint corn. Ears small, short, yellow in color. Recommended for the extreme north, where other kinds will not mature.

DISCO-SQUAW CORN (85 days)—A very early "Native" variety, having kernels all colors of the rainbow. A very beautiful corn and one that is very popular for late planting.

WHITE SQUAW CORN—Varies in type from a true white flint to a strain called White Flour Corn. The kernels of the latter are starchy and not hard like the true flint corn. Season from 85 to 95 days.

LONGFELLOW FLINT (90 to 95 days)—An eight-rowed yellow flint variety, well known almost everywhere in the North. A good yielder and very popular.

TRIUMPH FLINT (95 days)—A twelve-rowed standard yellow variety. One of the best yielders and very popular.

Amber Flint Corn.

SANFORD FLINT (100 days)—An 8-rowed white flint corn, popular in the Eastern states. Hardly early enough for the extreme Northwest.

There are several varieties of flint corn described above that are not usually grown or carried in stock by the Dakota Improved Seed Co. Please refer to page of prices on seed corn for information covering stocks offered.

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Minnesota No. 13 Corn

**Minnesota No. 13 Corn**

This corn needs no recommendation from us. Any one who has been at all in touch with corn growing in Minnesota and the Dakotas knows about Minnesota No. 13 and its record. Introduced by the Minnesota Experiment Station in 1896, it has been distributed across the United States and into some portions of Canada. It is generally considered as the best early corn. We now have some varieties that are earlier, but it is difficult to find as early a corn as Minnesota No. 13 that is equal in quality and yield. It will go down into history as having done more to extend the corn belt in the northern states than any other one variety. The yield of Minnesota No. 13 in Minnesota and the Dakotas ranges from forty to ninety bushels per acre; fifty bushels per acre is an average yield. One field of this strain, at Mitchell, in 1908, produced good, ripe corn in eighty-seven days from the time it was planted. We recommend this strain for central South Dakota and south central Minnesota. We do not recommend it for southern South Dakota or northern Iowa, for there are varieties which will give better returns at this latitude.

In our strain of Minnesota No. 13 we endeavor to retain the earliness of the true variety by getting the seed for our own planting either directly from the Minnesota Experiment Station or from one of their accredited growers each year. We thus preserve the type of the experiment station strain as nearly as possible, which would not be the case if we continued to raise this variety in the vicinity of Mitchell or south of here from the same stock year after year.

Riverview Special Corn

The Riverview Special has been developed by W. S. Hill on his Riverview Ranch, five miles south of Alexandria, S. D. Riverview Ranch consists of 1,360 acres and is located along the Jim River, in the best corn growing section of the county. It is the home of the famous Riverview herd of Red Polled cattle, which has taken first place at the state fairs of Minnesota, South Dakota, Iowa and Nebraska for several years. Mr. Hill has grown hundreds of acres of Riverview Special corn every year for several years and has maintained a separate breeding plot from which to select his seed, special care being taken to improve it in both quality and yield. The Riverview Special is a strain of the corn known in Hanson County under the name of Shabino corn. Several strains of this corn have been developed in the hands of special breeders under the names of Dakota Gold, Fulton Yellow Dent, Hanson County Yellow Dent, Riverview Special and others. We have looked these over carefully and we think the Riverview Special which we are offering here comes nearer meeting our needs for this latitude than the others. This strain hasn't been selected for the largest type of corn. The ear, however, is of good size and the season of the corn is somewhat earlier than some of the other strains. None of the types has been selected so that they are very pure, but all are good yielders, have a good depth of kernel, shell a large percentage of corn to the ear, produce an ear on practically every stalk, and, summing it all up, they produce a good yield of fine quality corn.

"There is more money in alfalfa and corn for live stock than in any other single crop or combination of crops in the world."—W. A. Wheeler.

Prices of All Seeds are given on Inside Back Cover

Registered

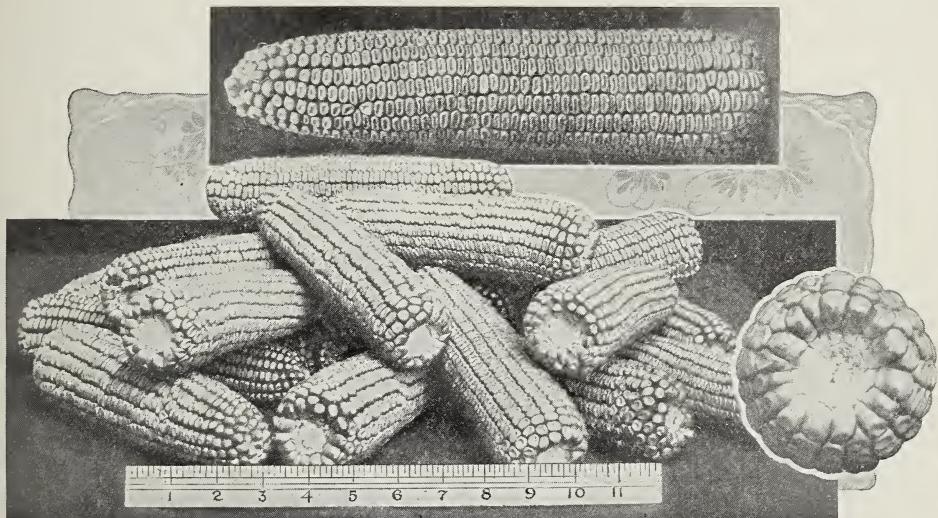
Disco
GUARANTEED STST

Seed Corn

Disco -Murdock Corn

Exceptionally Good 100-Day Variety for Northwest

In offering the Disco Murdock corn we have a variety that has for the past twenty or more years been developed for earliness and yield. We think it more nearly meets our ideas of the ideal corn for southern Minnesota and South Dakota and northern Iowa than any other variety we know of. It is true that the ears are not large, but they are well formed, shell off a large percentage of corn to the ear; the kernel is deep; the germ is large and the color is as near pure as any variety of yellow corn of equal earliness that we know of. In feeding value the Disco Murdock ranks second to none. It is almost



Disco-Murdock

impossible to find a starchy ear in the lot. Every one who sees a pile of this corn for the first time remarks: "What a beautiful corn!" and it certainly is true that the color of this corn is beautiful. It has the richest golden yellow of any corn that we handle. The cobs are nearly all true to type. One rarely finds a white or pink cob in the stock.

When we first offered this corn in 1908 we were not fully aware of the value of it for the Northwest. Since trying it out for several years and getting results from all those who have purchased seed of us, we find that we made no mistake in offering it, and are in a position now to put our unqualified recommendation back of it. We have shipped it into all parts of northern Iowa, southern Minnesota, southern South Dakota and northeastern Nebraska, and, so far as reports are received, it has made good everywhere that it has been sent.

From careful estimates of the cornfields of Davison County, our home county for the past three years, we think we are perfectly safe in saying that there are more acres of Disco Murdock corn grown here than there are of all other recognized named varieties put together. And this in spite of the fact that for several years we had to turn down hundreds of orders for Disco Murdock seed corn and supply other varieties or cancel the orders altogether.

We do not especially recommend the planting of this variety of corn much north of the latitude of Mitchell or the southern tier of counties in Minnesota. We have reports of very satisfactory yield and full maturity at quite a number of points north of this, but still we do not feel fully safe in recommending it very much north of this latitude.

WIMPLE'S YELLOW DENT—(110 days.) A variety that is grown considerably in some localities of southeastern South Dakota. It is rather late for the latitude of Mitchell, but matures here in favorable seasons. The ears are of good size and very rough. The kernels are deep, have a decidedly pinched dent and are usually somewhat starchy. The variety has won premiums at a number of corn shows and is popular with some who like a very rough corn. Wimple's Yellow Dent is not always carried in stock by the Dakota Improved Seed Co. Refer to price list.

Prices of All Seeds are given on Inside Back Cover

Three New Sorghums.

SUDAN GRASS—The Great New Hay Crop

The forage crop problem is one of the great problems of the Great Plains area. The various sorghums and millet have done much in the past to solve the hay problem. Sudan Grass is a sorghum of recent introduction which promises to outstrip all others as an annual hay producer under dry land conditions over the entire Great Plains area from North Dakota to Texas. It will take the place of millet and give much larger yields of hay per acre than any other known crop under dry land conditions.

Sudan Grass is a tall annual grass growing from five to eight feet tall. The stems are small and leafy. It is readily cured into hay and is relished by stock of all kinds. It produces several hundred pounds of seed per acre. When grown for hay it produces one or more tons per cutting and from 2 to 4 cuttings each season.

It may be planted in cultivated rows or broadcast. At present the supply of seed is so limited that we would recommend growing it only in cultivated rows 3 feet apart. From 1 1/2 to 3 pounds of seed per acre are required for this kind of seeding. It should not be planted until all danger of frost is over the same as with the other sorghums or millet. In this latitude the time for seeding would be about the middle of May or up to the first of June. The earlier it can be seeded safely, the better so as to give an opportunity for later cuttings during the season.

Because of the sudden popularity of Sudan Grass it is being offered by a large number of dealers and growers throughout the country. It is well to be cautious in the purchasing of this seed and to know the quality and source of all seed purchased. Southern grown seed is likely to contain Johnson Grass which in its manner of growth in the South is similar to the quack grass of the North. Sudan Grass also crosses readily with other sorghums. Pure seed can, therefore, only be produced in fields where the crop is grown to the exclusion of all other sorghums.

Seed is being offered at enormous prices ranging from 75 cents to \$1.50 or \$2.00 per pound. We have secured our seed from a very responsible scientific grower towards the northern boundary of Sudan Grass seed production and are offering it at as reasonable a price as is consistent with present values of high grade seed.

No one in the Great Plains area can afford not to give Sudan Grass a thorough trial. Even at the present price of seed when sown in rows for cultivation, the cost per acre for seed is low. Grow it one year and you will never wish to be without it.

KOWLIANG—A Grain Sorghum for the North

Various grain sorghums have been introduced by the U. S. Department of Agriculture in recent years and some of them have readily come into popularity. They have shown adaptation to various portions of the Great Plains area. Most of them, however, are better adapted to Southern than to Northern conditions. In Kowliang we have one of the latest of the new introductions of grain sorghums and one that is particularly adapted to the northern part of the Great Plains area. It has given wonderful results in South Dakota and in other states under similar conditions. We believe that it will occupy a very important place in the cultivated grain and forage crops of western South Dakota, North Dakota, western Nebraska, Wyoming and portions of Montana. The earliest introduction of Kowliang is known as the Manchu Brown. From this the South Dakota Experiment Station has two selections which differ somewhat in earliness. They are known as S. D. Numbers 290 and 289. The former is slightly earlier than the latter and is recommended for the more northern localities such as the northern half of South Dakota. The latter is a very little later and is recommended for the southern half of western South Dakota and other localities with similar seasons.

Under extremely dry conditions these two Kowliang selections have produced excellent crops even where the earliest and the most drouth resistant varieties of corn have failed.

Kowliang like all sorghums should not be planted until the soil is warm and danger of frost is past. In this latitude this would be about the middle of May. It should be planted in rows about 3 1/2 feet apart, using the corn planter with special sorghum plates. Under dry conditions from 2 to 4 pounds per acre are sufficient. Cultivation should be much the same as for corn. The grain may be fed to all classes of live stock and is especially desirable as a poultry feed.

In western South Dakota this crop is going to occupy a very important place and we recommend that every farmer put in at least a small acreage.

DAKOTA AMBER CANE—The Earliest of All Canes

Minnesota Amber Cane has been recognized for a number of years as an extremely early strain of the Black Amber or the Early Amber Cane. In this new strain which is called the "Dakota" Amber Cane and which is a selection from S. D. No. 341, we have the earliest strain of this crop that has yet been introduced. It is earlier than Minnesota 13 corn and will mature seed wherever this variety of corn will mature. We have offered S. D. No. 341 for several years but the supply of seed has been limited. As the various kinds of sorghum are now becoming more popular each year we anticipate that this, as well as Kowliang and Sudan Grass, will occupy a more important place among the farm crops of the northern Great Plains area and that seed will be produced in much larger quantities in the future.

Dakota Amber Cane is more dwarf than the ordinary type of Black Amber Cane, growing to a height of about 5 or 6 feet. It is a very leafy desirable type for northern localities.

Prices of All Seeds are given on Inside Back Cover

Southern Amber Cane. This is a common type of Amber Cane used only for fodder purposes in the north. It produces an abundant crop of fodder of very fine quality. It is also used in the production of syrup, but the stocks that we handle are intended only for fodder purposes.

Southern White Kaffir Corn. This is one of the non-saccharine sorghums and is used as a grain and fodder plant throughout the Great Plains region. It makes a very strong growth and produces an abundant supply of fodder either green or dry but is excelled as a fodder plant by Amber Cane.

Dwarf Essex Rape

Rape can be put to quite a number of uses. It may be sown alone as a spring crop to provide early pasture. It may be sown with spring grain to provide fall pasture after the grain is cut. In this latter case it is better sown after the grain is up and the ground dragged immediately after sowing to cover the seed. As it is a common practice to drag or weed our grain crops after they are up, the sowing of rape at this time can be easily done. Rape may also be sown just before the last cultivation of corn to provide fall feed and increase the yield of feed per acre of ground, or rape may be sown with fall rye to provide fall pasture.

The uses of rape are hardly limited to those mentioned above, as it may be sown at almost any time of the year and will provide quickly a large amount of forage. The farmers of the Northwest have not yet come to realize the possibilities of rape. There



Rape Sown in Corn at Last Cultivation

Rape Sown with Small Grain for Fall Pasture

are thousands of acres of land sown to small grains that could be made to yield an abundant fall pasture by the sowing of two pounds of rape seed to every acre of ground. The cost of the seed is so little and so small an amount is required that there is really no expense connected with it compared to the value of feed that is secured. The amount of seed that is sown per acre varies from two to six pounds, depending upon the way it is handled. When sown alone, from five to six pounds are recommended. When sown with small grain, two to three pounds.

Emmer or Speltz

This crop is becoming more popular every year. Very few farmers in the Northwestern Great Plains region can afford to be without it. It produces a good yield under adverse circumstances, where other crops would fail. It will stand more dry weather than any other grain crops, with the possible exception of durum wheat. It produces more food value per acre than most of our other grains and is a valuable feed for all kinds of stock. The plant is almost entirely free from rust, smut and other grain diseases.

We wish to do everything we can to encourage the growing of emmer in the Northwest. Farmers in the semi-arid portions of the Great Plains region who depend on such crops as Swedish Select and Sixty-Day oats, Durum Wheat, Brome-grass and Alfalfa need have no more fear of crop failures than those in the regions of more abundant rainfall. Emmer should occupy a place in every dry farming rotation.

Prices of All Seeds are given on Inside Back Cover

Millet

DAKOTA SELECTED KURSK—Our Kursk millet has made good. We put this out to the farmers of the Northwest in 1908 for the first time. As both a hay and seed producer it ranks very high, as shown by results secured the past four seasons. This variety has been grown at both the South Dakota experiment stations every year since it was introduced in 1898 from Kursk, Russia. It has given excellent results during the whole time, and in dry years the weight and quality of the hay have been far ahead of the common German or Hungarian millet. In favorable seasons the difference has not been so marked, but is always in favor of the Kursk. Our stock is grown from selections that were made at Brookings by Mr. Wheeler in 1904.



Millet. Head of Black Voronezh and Field Showing Rows of Kursk Millet Grown for Selection at the Government Experiment Station, Newell, S. D.

the Kursk. In a moist soil and under favorable conditions, the German gives excellent returns. We refer to the finer quality of German millet, and not to the coarse stock that comes from the extreme south. The coarse southern seed produces a great bulk of hay, but of rather poor quality. Our stock of Kursk millet has been in demand by seedsmen all over the Northwest.

DISCO-KURSK No. 1—A pedigreed strain of Kursk Millet that has been selected for several generations by Mr. A. C. Dillman at the Government Experiment Station, Newell, S. D. This selection has shown a marked superiority over other selections in drouth resistance and we recommend it particularly for localities with a limited amount of rainfall.

SIBERIAN MILLET—This is the same type of millet as the Kursk. In fact, the Kursk millet is a special importation of this millet from Russia. Our Dakota Selected Kursk is a pedigreed Kursk stock. What has been said of the adaptability of Kursk millet to the Northwest applies to a large extent to the regular Siberian millet.

GERMAN MILLET—This millet occasionally makes a taller, ranker growth and produces a greater weight of hay per acre than the Kursk, under favorable conditions. Our stock is clean and of excellent quality, and unless otherwise specified, is Dakota grown.

JAPANESE MILLET—This millet produces an abundance of hay, but it is coarse and of rather poor quality.

BLACK VORONEZH MILLET—This is a variety of broomcorn millet imported by the United States Department of Agriculture in 1898. So far as our records show, where it has been distributed throughout South Dakota, it has given remarkable yields of seed. This millet is not used for hay, but is grown only as a seed crop and is used to feed chickens and hogs. We do not recommend it for very moist localities, for it succeeds much better under drier conditions.

EARLY FORTUNE—This is one of the broomcorn type of millets similar to the Black Voronezh, except in color of seed, which is red instead of black. This is grown more generally in North and South Dakota than the Black Voronezh.

Prices of All Seeds are given on Inside Back Cover

BLATCHFORD'S CALF MEAL

THE PERFECT MILK SUBSTITUTE

Will raise three calves at the cost of one where whole milk is used. The most profitable feed on the market for the farmer.

100 Pounds Makes 100 Gallons of Milk-Substitute

The time is past when calves can be raised at a profit on whole milk. To-day the milk is worth far more for other purposes; the cities are calling for it; creameries, cheese factories and condenseries cannot get enough, and all of them paying good prices.

Sell Your Milk and Raise or Veal Your Calves on Blatchford's Calf Meal at 1 3 the Cost

This meal is a result of over 100 years' experience in feeding calves, and over 2,000 tons were fed in New York state alone last season, indicating the quality and general satisfaction it is giving. Testimonials from all over the world. Make your calves show you a good profit this winter and spring.

BLATCHFORD'S PIG MEAL

The only Complete Milk-Equal for Little Pigs

All "baby" pigs should be weaned on this strengthening tissue-builder. They will grow continuously and rapidly, developing bone and size without taking on surplus fat. It gives them the right start toward big, husky hogs.

PRICES, F. O. B. MITCHELL, S. D., FOR EITHER CALF OR PIG MEAL
100 lb. bag, \$3.50 50 lb. bag, \$2.00 25 lb. bag, \$1.25

On 500 pound shipments freight will be prepaid to any point east of the Missouri River in South Dakota, Minnesota, Wisconsin, Iowa and Illinois.

Write to-day for circulars telling all about these feeds and how to use them. A delay in writing may mean many dollars to you.

FOR SALE BY

Dakota Improved Seed Co., State Agents for South Dakota

FREIGHT RATES FROM MITCHELL, S. D., IN EFFECT JANUARY 1, 1915.

Given in Cents per 100 Pounds, Less than Car Lots.

Alfalfa, clover and grass seeds and cane seed take third class; grain, corn and feeds take fourth class as per Western classification.

		3d	4th		3d	4th		3d	4th		
Salem,	S. D.	.16	.12	Yankton,	S. D.	.22	.17	Lincoln,	Neb.	.55	.45
Sioux Falls,	"	.21	.16	Elk Point	"	.27	.20	Omaha,	"	.46	.35
Woonsocket,	"	.14	.11	Bridgewater,	"	.15	.11	O'Neil,	"	.74	.59
Wolsey,	"	.19	.14	Canton,	"	.21	.16	Terry,	Mont.	.97	.74
Redfield,	"	.22	.18	Flandreau,	"	.27	.20	Miles City,	"	1.04	.79
Aberdeen,	"	.28	.21	Howard,	"	.21	.16	Musselshell,	"	1.34	1.11
Bowdle,	"	.36	.27	Bradley,	"	.34	.26	Lewiston,	"	1.42	1.18
Mobridge,	"	.40	.30	Andover,	"	.32	.24	Butte,	"	1.50	1.26
Orient,	"	.39	.29	Milbank	"	.41	.30	Billings,	"	1.34	1.11
McLaughlin	"	.54	.46	Watertown,	"	.34	.26	Le Mars, Iowa	"	.30	.23
Lemmon	"	.65	.51	Faulkton,	"	.34	.26	Eagle Grove,	"	.51	.38
Plankinton,	"	.14	.10	Gettysburg,	"	.39	.29	Sanborn,	"	.35	.27
Chamberlain,	"	.21	.16	Hettinger, N. D.	"	.72	.55	Rock Valley,	"	.27	.21
Kennebec,	"	.32	.26	Linton,	"	.53	.41	Manilla,	"	.46	.34
Murdo,	"	.49	.42	Edgeley,	"	.47	.36	Charles City,	"	.43	.37
Belvidere,	"	.57	.49	Oakes,	"	.41	.31	Cedar Rapids,	"	.57	.45
Rapid City,	"	.73	.64	Fargo,	"	.68	.52	Des Moines,	"	.53	.41
De Smet,	"	.24	.18	Grand Forks,	"	.83	.64	Sioux City,	"	.30	.22
Huron,	"	.24	.18	Wahpeton,	"	.61	.47	Chicago,	Ill.	.67	.47
Miller,	"	.30	.22	Jamestown,	"	.67	.52	St. Louis, Mo.	"	.68	.50
Pierre,	"	.39	.29	Minot,	"	1.10	.85	Buffalo,	N. Y.	.98	.71
Philip,	"	.75	.59	Worthington, Minn.	"	.30	.23	Dallas,	Tex.	1.51	1.32
Underwood,	"	.87	.73	Winona,	"	.43	.37	Denver,	Colo.	1.04	.82
Belle Fourche,	"	.97	.81	Minneapolis,	"	.43	.37	Casper,	Wyo.	1.48	1.20
Buffalo Gap,	"	.96	.79	Duluth,	"	.66	.47	Leavenworth, Kan.	"	.64	.47
Dallas,	"	.82	.65	Marshall,	"	.43	.37	Milwaukee,	Wis.	.67	.47
Tripp,	"	.16	.12	Crookston,	"	.82	.66	Ia Crosse, Wis.	"	.43	.37
Armour,	"	.19	.14	Fergus Falls	"	.74	.58	Seattle, Wash.	"	2.20	1.83
Tyndall,	"	.20	.15	St. Cloud,	"	.59	.49	San Francisco, Cal.	"	2.50	2.00
Platte,	"	.28	.21	Fremont,	Neb.	.55	.44	Ogden,	Utah	1.72	1.41

Prices of All Seeds are given on Inside Back Cover

GUARANTEE

THE Dakota Improved Seed Company guarantees the seeds it sells to be as represented as to quality and germination. The Company will replace any seeds or refund the money on any seeds sold by it that prove to be otherwise.

It shall be the duty of the purchaser of goods sold by the Company in order to claim the benefits of its guarantee:—

1. To order seeds early.
2. To inspect shipment carefully on arrival and report anything that appears wrong.
3. To take samples of all important bulk seeds in shipment. This applies particularly to seed corn, grass and clover seeds, and other main-crop seeds.
4. To test portion of sample for germination or send sample to U. S. Government Branch Laboratory, Columbia, Mo., or to your State Experimental Station.
5. If results of these tests are not as represented or are not satisfactory, to report this to the Company and adjustment will be made accordingly.
6. To make complaints, if any, as soon as the fact on which complaint is made can be determined. Complaints on the germination of seed corn must be made within two weeks after shipment is received and must be accompanied by an average sample of 100 kernels of corn taken from the unsatisfactory lot. Field results as to germination and purity may be referred to in making complaint but must not be depended upon as basis for settlement because field conditions are beyond the Company's control.

The Company will not insure a crop from seeds purchased as to description and productiveness because of the many factors which influence a crop and which are entirely beyond its control.

In no case will the liability of the Dakota Improved Seed Co. exceed the price paid for the seed purchased of the Company.

We the undersigned, officers and directors of the Dakota Improved Seed Co., of Mitchell, South Dakota, do hereby represent that the above guarantees have been made with and by the authority of the Board of Directors and that the credit of said Company is pledged to the fulfillment of this contract.

W. S. Cill
President and
Treasurer

E. A. Dickey
Director

J. T. Monroe
Vice-President

L. R. Eshkin,
Director

W. A. Wheeler
Secretary and
Manager

A. C. Hitchcock
Director

M. M.
Director

We will consider it a special favor if you write below the names of some of your friends who are likely to use field seeds

NAMES	POST OFFICE	STATE

Please Read Before Ordering

When orders are received from this catalog the Dakota Improved Seed Company assumes that the customer has read this page before placing his order.

Write plainly your name, postoffice, county and state on each and every order sent us. If shipment is to be by freight, be sure to state whether the railway station is the same as your postoffice or not.

Order early. A great many delays and other troubles can be avoided by ordering early and we will consider it an accommodation if you will do this.

Cash should accompany order, and should be in the form of money order, bank draft or as currency in a registered letter.

Delays in shipment. If we cannot send your order the same day that it is received we will mail you a card stating that we have received your order and we state the amount of money inclosed and the number of the order. If this notice or the seeds themselves do not reach you in reasonable season write to us without delay, so that we can look the matter up. If your order can be filled within a few days this is all the notice we give. If for some reason shipment on a part or all of your order is unavoidably delayed, we will give you notice. It sometimes happens that we are out of stock or our stock may not be cleaned ready for shipment, or there may be other reasons. Write to us if your order does not arrive in due season.

Prices in this book are subject to change without notice. The prices quoted are based on the conditions prevailing at the time this book goes to press. If you desire to place an order for items on which the prices are likely to fluctuate or for large amounts of any seeds, it is better to write for firm prices before ordering, same to be good for immediate acceptance. Prompt attention will be given requests for quotations.

Do You Need a FARM PAPER?

THE DAKOTA FARMER

THE DAKOTA FARMER EMPIRE
North & South Dakota, Montana, Wyoming

ESTABLISHED 1881

PUBLISHED Twice a Month by The Bushnell Co., Aberdeen, S. D.
Subscription Price: 1 year \$1; 3 years \$2; 5 years \$3.

Save Fifty Cents

If you are farming, or interested in farming, you do. Why? Because this is a time of wonderful progress in farming, and you must have some means of keeping up with the strides your neighbors are taking toward increasing their production per acre.

The farm paper, if it is a good one, gives you this means, placing before you not only the actual experiences of other farmers, but also the results of study and experiments by men who spend their lives in developing better farming methods.

The Dakota Farmer is a good farm paper. We believe it should be in the hands of every farmer and stockman in "The Dakota Farmer Empire," and have made a special arrangement with the publishers whereby our customers can secure it for just half the regular price.

Fill out the coupon on other side and send it, together with 50c to

The Dakota Improved Seed Co., Mitchell, S. D.
Note—Be sure to send the coupon to us; not to
the pulp shers.

Disco Order Sheet

Date----- 191-----

Dakota Improved Seed Co., Mitchell, So. Dak.

Gentlemen: Please send the following seeds, etc.,

by _____

-State here if wanted by freight, express or parcel-post-

Name _____

Post Office _____

State _____ County _____

R. D., P. O. Box or St. No.-----

Nearest Railway Station-----

State here name of town to which goods are to be sent if different from P. O.

Is there a freight agent at your railroad station?-----

If there is no freight agent at your shipping point, money must be sent with order to prepay the freight charges.

This order is placed subject to the guarantee and conditions of sale given in the Disco Seed Book

For more information about the study, please contact Dr. Michael J. Hwang at (319) 356-4000 or email at mhwang@uiowa.edu.

STATE AMOUNT ENCLOSED	
Currency.....
Draft
Money Order..
Total.....

PLEASE DO NOT USE THIS SPACE			
Order Received			
<hr/>			
Order No.			
Freight		Charges	
Express		Collect	
Parcel Post		Prepaid	
Filled by	Date	Checked by	How Slipped



To The Dakota Farmer:

To The Dakota Farmer:
Send me The Dakota Farmer for one year, for which 50 cents is
enclosed herewith;

Name _____ B F D No _____

Postoffice _____ County _____ State _____

Cut Off On This Line



Price List



Jan. 1st, 1915

The prices given below are those in effect on the above date or as near as we can anticipate them for the season. All prices are subject to change without notice. We would, therefore, invite correspondence on seeds where prices are likely to vary or on any seeds when large quantities are desired.

New price lists may be issued from time to time as occasion requires. If any prices seem to be out of line with current values at the time of placing your order, please correspond with us before ordering.

All prices are f. o. b. Mitchell, S. D. Freight or express to be paid by purchaser on arrival of shipment. On parcel post shipments the charges must be estimated and included with remittance.

Prices given on this sheet are per 100 lbs. except where noted. Wherever prices are "per 100 lbs." the scale of prices on less than 100-lb. lots will be as follows unless otherwise noted: Add to the 100-lb. rate per pound; 1 cent per lb. on 50 to 99 lbs.; 2 cents per lb. on 20 to 49 lbs.; 3 cents per lb. on 10 to 19 lbs.; 4 cents per lb. on 1 to 9 lbs.

Disco Alfalfa Seed

All alfalfa seed offered is grown in Dakota or Montana or under equally severe conditions unless otherwise specified.

Disco Commercial Alfalfa Seed

	Page 13	Price per 100 lbs.
Disco brand		\$21.00
Emerald brand		19.00
Opal brand		17.00

Grades of commercial Dakota grown alfalfa seed not equal to above will be sold on sample through correspondence. We have some specially attractive prices to those who wish to plant alfalfa at the lowest possible cost or wish to sow alfalfa seed with small grain as a fertilizer crop.

Disco Registered Alfalfas

	Pages 5 and 13	Price per 100 lbs.
Extra-Disco	99½%	Purity \$25.00
Disco	99%	Purity 23.00

All Disco Registered Alfalfas are given Disco Register numbers. **Disco Numbers 28, 38, 52 and 79** which have been furnished heretofore in large quantities can be furnished this year until the stocks are sold. If a special Disco Register Number is specified as preferred please give second choice or option of substitution. If no number is designated we will use our best judgment in the selection.

Disco Pedigreed Alfalfas

	Pages 7, 9, 11 and 13	Price per 100 lbs.
Disco-Baltic and Disco-Grimm		\$65.00

Our supply of Disco-Baltic and Disco-Grimm Alfalfa seed is very limited.

Disco Pedigree Nos. 1a, 2a, 5a, 6a, 10a, 11c, 12c, 13c and 84c. Sold only in sealed packets of 200 seeds each. 50 cents per packet; 3 packets for \$1.00.

Disco Clover Seed

	Page 16	Price per 100 lbs.
Medium Disco brand		\$20.00
Medium Emerald brand		18.00
Mammoth, Disco brand		20.00
Mammoth, Emerald brand		18.00
Alsike, Disco brand		21.00
Alsike, Emerald brand		19.00
White or Dutch Clover		40.00
Sweet Clover, White-flowered, hulled		30.00
Sweet Clover, White-flowered, unhulled		22.00

Disco Grass Seed

	Page 16	Price per 100 lbs.
Timothy, Disco Brand		\$ 9.00
Timothy, Emerald Brand		7.50
Russian Brome Grass		14.00
English Blue Grass		14.00
Slender Wheat Grass		13.00
Kentucky Blue Grass		18.00
Disco Lawn Mixture		20.00

Prices subject to change without notice. Bags included at prices quoted.

Dakota Improved Seed Company, Mitchell, South Dakota

Disco Seed Corn

	Pages 17-25	Days to Mature	Described on page	Price per bu. in even-bu. shel lots
Disco-Pride		85	19	\$2.00
Northwestern Dent.		85	20	2.00
Minnesota 23		85	20	2.50
Minnesota 13		90	24	2.00
Disco 85-day White		85	21	2.00
Disco 90-day White		90	21	2.00
Disco 100-day White	100	21	21	2.50
Disco-Murdock		100	25	2.25
Riverview Special		100	24	2.25
Disco Amber Flint		90	23	2.25
Gehu Flint		80	23	2.25
Squaw Corn		85	23	2.50
Northern Fodder Corn		18	12.5	1.25
Medium Fodder Corn		18	12.5	1.25
Sweet Fodder		18	2.50	

Seed-corn is regularly put up either one bushel or two bushels to a bag. Any fraction of a bushel will be furnished at that fraction of the bushel-rate plus 15 cents. For example, the cost of $\frac{1}{4}$ bushel of corn at \$2.00 per bushel would be 50 cents plus 15 cents or 65 cents.

Disco Sorghums

	Pages 26 and 27	Price per 100 lbs.
Sudan-Grass		Choice northern grown stock. Must not be confused with southern grown seed which is likely to be mixed with Johnson Grass or other sorghums

Kowliang, Choice Dakota grown seed \$6.00

"Dakota" Amber Cane, (S. D. No. 341 Selection) Choice Dakota grown seed.

Stock very limited 6.00

Amber Cane, Southern grown for fodder only 3.50

Kaffir Corn, Southern grown 3.50

Disco Millets

50 lbs. per bu. of all but Japanese which is 36 lbs.

	Bushel	Sack of $\frac{1}{2}$ bus.	4 Sacks per sack
Page 28	\$1.60	\$3.50	\$3.25

Selected Kursk 2.00 4.00

Disco-Kursk No. 1 1.60 3.50 3.25

Siberian 1.60 3.50 3.25

German, S. D. grown 1.60 3.50 3.25

Early Fortune 1.60 3.50 3.25

Japanese 1.50 3.25 3.00

Miscellaneous

Dwarf Essex Rape, Per 100 lbs. \$10.00

Emmer or Speltz, Per 100 lbs. \$ 2.00

Kherson or Sixty-Day Oats, per bu.90

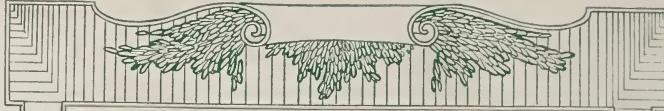
Swedish Select Oats, Per bu.90

Blatchford's Calf Meal

100-lb. bags 3.50

50-lb. bags 2.00

25-lb. bags 1.25



There is more money in Alfalfa and Corn for live stock than in any other single crop or combination of crops in the world.

W.A.Wheeler.